

## Cybernetics II

Roy Ascott Studio BA in Technoetic Arts

如：SIVA-DETAO ADVANCED CLASS TECHNOETIC ARTS PROGRAM

Place: DeTao Building at Shanghai Institute of Visual Arts (SIVA), Shanghai, China

### MODULE DETAILS:

Course Title:	Technoetic Arts
Module Title:	Cybernetics II
Module Code:	
Year:	One
Semester:	One
Credits:	2
Hours/Week:	2
Hours/Semester:	
lecturer:	Professor Clarissa Ribeiro Teaching Assistant: Luo Bin Li
Building/Room:	DeTao, 12 <sup>th</sup> Floor, Technoetic Arts Computer Classroom and Regular Classroom

### MODULE DESCRIPTION:

A series of lectures examining the art of interaction in dynamic networks, both natural and artificial, showing the history of the field, and its application to science and society, biology, the arts and communication, with special reference to the root structure of the degree program.

### MODULE LEARNING OBJECTIVES:

At the end of the module the students will be able to:

- Have a clear understanding of concepts related to Complex Adaptive Systems such as Emergence and Self-Organization;
- Be able to develop their own relational approaches by getting involved in the production of the proposed exercises;
- Understand society from the perspective brought by cybernetics and The Sciences of Complexity;

### MODULE OUTLINE: (Part I - Professor Clarissa Ribeiro)

The classes will be structured by the oriented effort of understanding concepts related to Complex Adaptive Systems such as Emergence and Self-Organization, in order to give the students a minimal support to comprehend the challenge they have to accomplish for the Behavior course - working in groups as organisms which behavior will be set up by previously designed "Calibrators" (vide Roy Ascott 'Ground Course', 1960s). The students will be guided through reading dynamics followed by theoretical exams and will precede research on specific case studies related to explorations of the above mentioned concepts in media art. Directly related to the research, the students will develop in Processing ([www.processing.org](http://www.processing.org)) interactive projects exploring the idea of Artificial Life to be installed at the Studio's Interactive Table and, in the future, to be exhibited and experienced by visitors (what is already happening at the moment).

WEEK	HOURS	CONTENT
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1	2	<p><u>CYBERNETICS II</u> Professor Clarissa Ribeiro <b>Monday 2/3</b></p> <p><u>TOPICS:</u> Complex Adaptive Systems; Emergence; Self-Organization. <u>ASSESSMENT:</u> Explanation about the concepts; Introduction to the class; Conversation; Discussions; reflection.</p>
2	2	<p><u>CYBERNETICS II</u> Professor Clarissa Ribeiro <b>Monday 9/3</b></p> <p><u>TOPICS:</u> Complex Adaptive Systems; Emergence; Self-Organization. <u>ASSESSMENT:</u> Explanation about the concepts; Introduction to the class; Conversation; Discussions; reflection.</p>
3	2	<p><u>CYBERNETICS II</u> Professor Clarissa Ribeiro <b>Monday 16/3</b></p> <p><u>TOPICS:</u> Complex Adaptive Systems; Emergence; Self-Organization. <u>ASSESSMENT:</u> <b>Exam 1 - "The Myth of The Ant Queen"</b> Reference: Johnson, Steve. Emergence: The connected lives of ants, brains, cities, and software, 2001.</p>
4	2	<p><u>CYBERNETICS II</u> Professor Clarissa Ribeiro <b>Monday 23/3</b></p> <p><u>TOPICS:</u> Complex Adaptive Systems; Emergence; Self-Organization. <u>ASSESSMENT:</u> <b>Exam 2 - "Street Level"</b> Reference: Johnson, Steve. Emergence: The connected lives of ants, brains, cities, and software, 2001.</p>
5	2	<p><u>CYBERNETICS II</u> Professor Clarissa Ribeiro <b>Monday 30/3</b></p> <p><u>TOPICS:</u> Complex Adaptive Systems; Emergence; Self-Organization. <u>ASSESSMENT:</u> Case Studies: Artificial Life; Sommerer and Mignonneau; A-Volve. <u>References:</u> Grau, Oliver. Virtual Art: From Illusion to Immersion, 1995. (Chapter 8, Evolution) Sommerer, C.; Mignonneau, L. Official Website: Interface. Available at: &lt;<a href="http://www.interface.ufg.ac.at/christa-laurent/">http://www.interface.ufg.ac.at/christa-laurent/</a>&gt;. Jefferson, David; Taylor, Charles, et all. Evolution as a Theme in Artificial Life: The Genesys/Tracker System, 1990.</p>
6	2	<p><u>CYBERNETICS II</u> Professor Clarissa Ribeiro <b>Monday 6/4</b> National Holyday, no classes scheduled.</p>
7	2	<p><u>CYBERNETICS II</u> Professor Clarissa Ribeiro <b>Monday 13/4</b></p> <p><u>TOPICS:</u> Complex Adaptive Systems; Emergence; Self-Organization. <u>ASSESSMENT:</u> <b>Exam 3 - "Artificial Life"</b> <u>References:</u> Grau, Oliver. Virtual Art: From Illusion to Immersion, 1995. (Chapter 8, Evolution) Sommerer, C.; Mignonneau, L. Official Website: Interface. Available at: &lt;<a href="http://www.interface.ufg.ac.at/christa-laurent/">http://www.interface.ufg.ac.at/christa-laurent/</a>&gt;. Jefferson, David; Taylor, Charles, et all. Evolution as a Theme in Artificial Life: The Genesys/Tracker System, 1990.</p>
8	2	<p><u>CYBERNETICS II</u> Professor Clarissa Ribeiro <b>Monday 20/4</b></p> <p><u>TOPICS:</u></p>

		<p>Complex Adaptive Systems; Emergence; Self-Organization.</p> <p>ASSESSMENT:          Exercise: Art Project 1 - "Artificial Life"          Development in Processing (www.processing.org) of individual interactive projects exploring the idea of Artificial Life to be installed at the Studio's Interactive Table and, in the future, to be exhibited and experienced by visitors.</p> <p>Installation in the Interactive Table at the Studio and interaction with / fruition of all the projects by the evaluation committee (Professor Clarissa Ribeiro, Hui Shu, Luo Bin Li) for The Artificial TAO Prize. Winners to be announced on April 27, 2014.</p>
9	2	<p><u>CYBERNETICS II</u> Professor Clarissa Ribeiro  <b>Monday 27/4</b></p> <p><u>TOPICS:</u>          Complex Adaptive Systems; Emergence; Self-Organization.</p> <p>ASSESSMENT:          Exercise: Art Project 1 - "Artificial Life"          Development in Processing (www.processing.org) of individual interactive projects exploring the idea of Artificial Life to be installed at the Studio's Interactive Table and, in the future, to be exhibited and experienced by visitors.</p> <p><u>Final Presentation / The Artificial TAO Prize:</u>          Announcing of the winners and classification for each one of the categories defined by the evaluation committee (Professor Clarissa Ribeiro, Hui Shu, Luo Bin Li)</p>
10	2	
11	2	
12	2	
13	2	
14	2	
15	2	
16	2	
17	2	
18	2	
19	2	
20	2	

MODULE RESOURCES:

The following books are recommended for this module:

- 1) Grau, Oliver. Virtual Art: From Illusion to Immersion, 1995.
- 2) Jefferson, David; Taylor, Charles, et all. Evolution as a Theme in Artificial Life: The Genesys/Tracker System, 1990.
- 3) Johnson, Steve. Emergence: The connected lives of ants, brains, cities, and software, 2001.
- 4) Sommerer, C.; Mignonneau, L. Official Website: Interface. Available at: <http://www.interface.ufg.ac.at/christa-laurent/>.

MODULE ASSESMENT:

Practical and theoretical assignments will be assessed. The entire process will be guided by the Lecturers as conductors, giving the students freedom to discover and build their own strategies in the production of the exercises.

- Exam 1, CAS, Emergence, Self-Organization: 10%
- Exam 2, CAS, Emergence, Self-Organization: 10%
- Case Studies: Artificial Life (Power Point presentation): 10%
- Exam 3, Artificial Life, Media Art and Science: 10%
- Artificial Life project for the Interactive Table: 20%

Total (Professor Clarissa Ribeiro): 60%

MODULE EVALUATION:

Students will be evaluated for attendance, participation, and level of creative and critical reflection shown through their practical and theoretical work assignments.

Grading:

Total Grading / Professor Clarissa Ribeiro: (60%)

Total Grading /Professor Živa Ljubec: (40%)

Total: 100%