

## LA 4101 Illustrating Ecologies

LSU Robert Reich School of Landscape Architecture Spring 2010

bradley cantrell . assistant professor of landscape architecture



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office hours: M 11:30-12:30 or by appt.

[reactscape.visual-logic.com](http://reactscape.visual-logic.com)

[lab.visual-logic.com](http://lab.visual-logic.com)

Class Meeting Time: W 8:30-11:30

### Premise

This advanced research seminar will explore animating and modeling ephemeral ecological systems. Students will be asked to research ecological processes or constructed systems and deconstruct the process through modeling and animation. Students will learn techniques necessary to model ephemeral processes such as wind, fire, earth and water using particle systems and other techniques that are at times simulations and at other times illustrations. Digital representation will be combined with field observations of ecological processes through recording methods such as video, photography, sensing and sketching in order to fully understand the complex processes that will be illustrated.

As a research seminar students will become experts on specific software, representation techniques, and their chosen ecological system. This information will be documented at [lab.visual-logic.com](http://lab.visual-logic.com) to serve as a resource for the seminar and outside collaborators.

### Pedagogical Objectives

- *Develop an observation method to document ephemeral ecological systems.*
- *Clearly define the scope of an ecology or ecological system.*
- *Create a comprehensive body of research, including scientific and anecdotal evidence to describe an ecological system.*
- *Design an exhibit using analog and digital media to express the intricacies of the ephemeral ecologies.*
- *Document the representation and research process.*
- *Develop a representation method and document the procedures.*
- *Apply knowledge from research to the representation and simulation process.*

## LA 7002 Graduate Design Studio

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### Procedure

Students will work in pairs to complete all phases of work during the semester; ecological system research, software/tool review, technique documentation and the exhibition. All sources must be cited.

### Ecological System Research

Each group will define an area of research focusing on a specific ecological system. For the purpose of this seminar ecological system will define naturally occurring and/or constructed/reconstructed systems. Typically ecology refers to the relationship of organisms to one another, or in terms of human ecology the relationship of human beings to the environment. You are asked to define an ecological system and to create a body of research to support the representation of the components of the ecology.

The research must be comprehensive, concentrating on the following elements; overall system/framework, relationships of elements (flora, fauna, etc), relationship to larger systems, temporal change, ephemeral qualities, perceived experience and physical relationships. Each group will create a page on the lab.visual-logic.com website that will be used to compile and analyze the research. The group is not limited to a single page for the research and is encouraged to develop a hierarchy of pages to fully explain the chosen system.

### Software/Tool Review

The tools necessary to create compelling digital representations are complex and not specifically tailored to the design professions. Each group will choose a specific digital tool in order to research and review the tools ability to create ecological illustrations. The review should contain; an overview, specific application and examples. Students can choose from the following software and/or tools to create their review:

Particle Flow . 3ds max	Reactor . 3ds max	Polygon and Nurbs Modeling
Vue xStream	Autodesk Civil 3d	Fluid Dynamics . Maya
Adobe After Effects	CAD/CAM . 3d Print/Laser Cut	GI Systems . Mental Ray, Vray

Students may also choose another software/tool if approved by the instructor.

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### **Technique Documentation**

It will be necessary to understand and share techniques that are developed to represent the researched ecologies. Each group will document two techniques that they develop. The techniques may be original or derived from other work and/or tutorials. Each technique should apply specifically to representing a component of the researched ecological system and therefore should not be generic.

The documentation will show the representation process step-by-step and explain not only how it is done but why this technique is appropriate. The documentation should contain images and/or screenshots and may benefit from source files to allow others to work their way through the process.

### **Exhibition**

The culmination of the semester will be an exhibition that represents the researched ecological system as a framework, process, and experience. Each group will determine, based on their research, the appropriate methods to represent each of these modes. This will be accomplished through prototype models, animations and/or illustrations.

**Framework** . *a basic structure underlying a system or concept.*

**Process** . *a series of actions or steps taken in order to achieve a particular end or a natural or involuntary series of changes or a systematic series of mechanized or chemical operations that are performed in order to produce or manufacture something.*

**Experience** . *(noun) practical contact with and observation of facts or events or an event or occurrence that leaves an impression on someone. (verb) encounter or undergo or feel.*

Each group will be responsible for designing and creating a stand alone exhibit that works with each of the other groups in the class as a single exhibition. The students and professor will decide on a series of common attributes that will be similar across the group work.

### **Website**

All of the work in the seminar will be documented at [lab.visual-logic.com](http://lab.visual-logic.com). Each student will have an account on the website and will be required to contribute to their group research, review, and documentation.

## **LA 7002 Graduate Design Studio**

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### **Course Policies**

#### **ATTENDANCE POLICY:**

Attendance is mandatory for the scheduled duration of the seminar sessions (Wednesday 9:30-11:30). More than three unexcused absences may constitute grounds for placement on attendance probation (see Attendance Regulations in the LSU General Catalog). Since most class meetings or general discussions will take place at the beginning of the class period it is important that all students should be in the seminar promptly at 9:30. Arriving late or leaving early, unless authorized by the instructor, will be considered an unexcused absence.

#### **CULTURE:**

It is imperative that each student adopt a rigor to their research approach. Projects will explore pragmatic representation and analysis issues as well as ask students to research information outside of seminar. In this advanced research seminar, projects should capitalize on each student's background and/or area of interest. It is the student's responsibility to develop a strategy to work through each assigned design problem.

#### **SUBSTANCE ABUSE:**

University regulations prohibit the consumption of alcoholic beverages and the use of any illegal substance in University buildings at any time. Violations are likely to result in serious penalties. Smoking is prohibited in University buildings and within 25 feet of University buildings at any time (this includes the balconies and porches of the Design Building and the courtyard). Repeated violations of any of these regulations may also result in the Design Building being closed at night and on weekends. For the benefit of all, please be aware of the serious consequences that could result from violations of these regulations.

### **Grades**

Each student's final grade will be determined by the student's progress and final product of each phase of the research. This includes the quality of interaction, production, craft, content, and presentation of the student's work. Students must engage in active discussions regarding the progress of their work. Projects will not be accepted that have not been reviewed by the instructor. Late and incomplete work will not be accepted unless the student has a valid excused absence. Students will be expected to participate in all class/online discussions, field trips, and reviews. Participation is critical for your progress in studio and is therefore required.

Participation - Site Visits . Reviews . Readings	15%
Project Phases	
Ecological System Research	20%
Software/Tool Review	15%
Technique Documentation	15%
Exhibition	35%

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### Schedule - tentative

#### Week 1 January 18 to January 22

Wednesday Course Introduction, Research groups assigned, software review assigned, technique documentation assigned. Field Trip discussed.

#### Week 2 January 25 to January 29

Wednesday Design Week

#### January 31st

Sunday Meet in Clinton, MS at the Mississippi River Basin Model

#### Week 3 February 1 to February 5

Sunday Meet in Clinton, MS at the Mississippi River Basin Model

Wednesday Research Topic Defined, Strategy Outline, Exhibition Design Review

#### Week 4 February 8 to February 12

Wednesday Software Review Initial Submission . Technique Documentation defined

#### Week 5 February 15 to February 19

Wednesday Technique Documentation Initial Submission, Discussion

#### Week 6 February 22 to February 26

Wednesday Technique and Software Documentation Review and Discussion

#### Week 7 March 1 to March 5

Wednesday Representation Strategy and Storyboard/Diagram Review

#### Week 8 March 8 to March 11

Wednesday Strategy Session . Discussion

#### Week 9 March 15 to March 19

Wednesday Strategy Session . Discussion

#### Week 10 March 22 to March 26

Wednesday Strategy Session . Discussion

#### Week 11 March 29 to April 2

Wednesday Exhibit Prototypes Due

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### **Week 12      April 5 to April 9**

Wednesday      Spring Break

### **Week 13      April 12 to April 16**

Wednesday      Strategy Session . Discussion

### **Week 14      April 19 to April 23**

Wednesday      Studio Reviews

### **Week 15      April 26 to April 30**

Wednesday      Strategy Session . Discussion

### **Week 16      May 3 to May 7**

Wednesday      Exhibition Setup and Gallery Review

Please note that the syllabus is subject to change at the discretion of the professor

### **Text**

*Draper, P. 2008, Deconstructing the Elements, Elsevier Press.*

*Lynda.com tutorials*