

SYLLABUS

Academic staff :

LECTURER : Professor James C. Stevens, AIA

ASSISTANT/S: Gerdi Papa

Course Name: makeLab – Parametric Surfacing

Detailed syllabus of the subject (Silabusi detajuar i lendes)

General Course Description (PERSHKRIMI PERGJITHSHEM I LENDES)

The course will conduct a critical analysis of digital fabrication and associated emerging technologies for architecture with respect to structural systems. This will be addressed specifically through the **analysis of a developed surfaced and the implications of panelization**. This will be accomplished by full engagement with parametric modeling, Computer Numeric Control (CNC) and 3D rapid prototyping (3D printing) systems. Students will design, prototype and fabricate their projects at various scales. The content of the course will give students an understanding of digital tectonics and assembly. The applied projects will be supplemented with readings and discussions of significant precedents and techniques.

Course Objectives (OBJEKTIVAT)

The objective of the workshop is to digitally design and fabricate masonry units.

The process will include:

- 1) Parametrically generating surface panels
- 2) Parametric generation of panel variants
- 3) Fabrication and production of CNC G-code
- 4) Final fabrication of a foam panels.

Program Content/Topics and Schedule (PËRMBAJTJA E PROGRAMIT TË LËNDËS – TEMA)

02 Dec -*Introduction to makeLab and Digital Fabrication Project* introduction, assemble design groups

03 Dec -*Demonstration: Software, Studio – Group work*
Studio – Group work (concurrent), Demo – CNC (concurrent)

04 Dec -*Studio group work, panels produced*

Course Content/Keywords (PËRMBAJTJA E PROGRAMIT TË LËNDËS – BRIEF)

Digital Fabrication / Parametric Design / Post-production (G-code) / Casting / Assembly / Structure / Panelization

Assignments

(DETYRAT/ PROJEKTET
DHE DETYRIME TË TJERA)

PARAMETRIC PANELIZATION

The combination of parametric tools with digital fabrication technology provides a powerful methodology for architecture. Recent technological developments have left architects overwhelmed by the opportunities and choices available. Regardless of how architecture is generated, the outcomes can be categorized in three primary systems: forming, joining and removing. All digital fabrication processes produce architecture in one or more of these systems. The topic of this workshop is to study one of the three systems – Forming. For the purposes of this workshop forming will be defined as: The parametric creation of a form-giving object that can be used to replicate multiple building components, in this occasion a developed surface panel.

Each student group will be responsible for the following outcomes:

- Isolation and creation of a minimum of 4 developed surface panel from foam.
- Each panel shall be 200mmX200mmX12mm (max of stock material)
- Assemble the units into a single mosaic.

Methodology

(METODOLOGJIA DHE ANA
DIDAKTIKE)

The course will be conducted with a combination of lectures, studio work, desk critiques and student presentations. Each student is expected to participate in lectures and to demonstrate competency through the final design project. It is paramount that each student's design methodology is iterative.

Required Literature

(LITERATURË E
DETYRUESHME)

All text, reading and reference material will be provided to the students digitally at <http://make-lab.org/albania-2015>

Recommended Literature

(LITERATURË E
REKOMANDUAR)

Digital Vernacular, Architectural Principles, Tools and Processes,
James Stevens & Ralph Nelson
Architecture in the Digital Age: Design and Manufacturing, Branko
Kolarevich

1. Evaluation Table (Tabela e detajuar e vleresimit)

Evaluation component (Komponentet e Vleresimit)	% weight distribution (Shperndarja e Peshes Specifike ne %)	Barrier
ATTENDANCE (FIXED)	10	
Rigor and Participation	10	
Final Project	80	
TOTAL	100	

Ps. For each component you can assign a barrier: for example if the evaluation component of the project is 30 %, you can also establish the minimum points to pass (example. 15/30).

2. Point-grade conversion

(Konvertimi i pikeve ne Note)

Points (Piket)	Grades (Nota)
94 - 100	10
83 - 93	9
75 - 82	8
65 - 74	7
55 - 64	6
50 - 54	5
0 - 49	4