

## SYLLABUS

### Academic staff :

LECTURER : Professor James C. Stevens, AIA

ASSISTANT/S: TBA

**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 topographical mapping. This will be addressed specifically through the **analysis of existing topography and accurate reproduction via digital fabrication**. 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 topographic reproduction and analysis. 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 topographical surfaces.
- 2) Digital generation of 3D surfaces from 2D mapping.
- 3) Fabrication and production of CNC G-code
- 4) Final fabrication of a foam models of typography.

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

11 March -*Introduction to makeLab and Digital Fabrication* Project introduction, assemble design groups

12 March -*Demonstration: Software, Studio – Group work*  
Studio – Group work (concurrent), Demo – CNC (concurrent)

13 March -*Studio group work, possible site visit.*

18 March – Studio group work

19 – March – Studio group work

20 March – Studio group work, Final review

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

Digital Fabrication / Parametric Design / Post-production (G-code) /  
Surfacing / Assembly / Typography

**Assignments**  
(DETYRAT/ PROJEKTET  
DHE DETYRIME TË TJERA)

Digital Zeza  
The Zeza Canyon will serve as a site for analysis and creation for the workshop. Located outside of Tirana in the Ishmi River Canyon the valley is home to an old trading route with significant cultural remnants including cobblestone paths and traditional bridges. This valley and its historic route have been since bypassed by modern roads. Our workshop will attempt to document this valley with a digital 3D model and fabricate it using CNC technology at various scales.

Each student group will be responsible for the following outcomes:

- Isolation and creation of a designated quadrant of the Zeza valley.
- Digital fabrication of a solid surface representing the valley
- 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.

**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)

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

*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)

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