3D Printing Bio-Parametric Lamps
SIGraDi 2024 In person workshop

E-mail: **affonso@uic.es**

Instructors: Affonso Orciuoli, Universitat Internacional de Catalunya, Barcelona
Mauricio Matias, Universidad Belas Artes, São Paulo
Pablo Baquero, Faberarium, Barcelona

Language: **English, Spanish and Portuguese**

Location:
McNeel Europe, Carrer Roger De Flor 32, Barcelona.

Workshop Keywords: Bionics, Generative Design, Lighting Design, Performance design.

Workshop Brief:

Introduction: Participants will delve into the intricacies of enhancing collaborative design processes by integrating light and pattern analysis into the initial stages of design. The workshop leverages the power of generative design to create lamp designs that reflect the performance of nature through bio-parametric design. Our primary objective is to equip participants with the essential knowledge and skills required to foster a collaborative work environment.

Methodology: The workshop will place a strong emphasis on effective teamwork, enabling participants to work simultaneously on 3D sketch models, facilitated by the seamless integration of 3D printing models using Grasshopper parameters. We will explore the associative exploration of complex geometries and morphological iterations, designing with the lights and shadows of the final projects.

Expected Results: This is a 100% practical workshop. By the end, participants will have created physical, customized, and parameterized lamps that reflect the performance of nature, utilizing advanced 3D printing methods. Additionally, participants will gain the ability to generate a variety of lamp "families" with distinct yet related designs, demonstrating the flexibility and power of bio-parametric design in real-world applications.

Hardware: Felix Printers TEC 4.1 with 1.0 mm nozzle.

Workshop Schedule

Monday, November 11: 9 - 13 and 14-18h

- Morning: Presentations
- Introduction to 3D Printing with Rhino / Exploratory Work Session
- Afternoon: Parametric Collaboration and Design Session with Grasshopper.

Tuesday, November 12: 9 - 13 and 14-18h

- Morning: Work session with Advance Grasshopper.
- Integration of Grasshopper with 3D Printing / Exploratory Work Session /
- Afternoon: Discussion and Printing Session

Requirements: Students should bring their own laptop with the following software installed: Rhinoceros, Grasshopper, Cura.

Students: **Maximum 15 students.**

Students Requirements selection:

- Curriculum
- Rhinoceros Required
- Grasshopper Recommended
- Previous 3dprinting experience Recommended.

Application form

https://docs.google.com/forms/d/e/1FAIpQLSeoYY1UZqFFB09XZLHPtOd7xp-6NPlecRGWEhzbiQJvqiy48A/viewform

Deadline is November 1st.