



## NAAB International Certification

### Appendix 1: Template for Course Descriptions [limit 1 page per course]

#### Number & Title of Course (total credits awarded):

DGC212 - Geometric and Generative Modelling - Semester 4 - ECTS 3 - Cycle/Profile: 1st. Cycle/Core - Scientific Area: DGC-Drawing, Geometry and CAD

#### Course Description (limit 25 words)

Generative Geometric Modeling fosters analytical thinking for crafting forms through advanced geometric techniques. Assessment prioritizes critical thinking applied to architectural design contexts.

#### Course Goals & Objectives (list):

Develop proficiency in Generative Geometric Modeling techniques.  
Cultivate analytical thinking skills in the context of form creation.  
Master advanced geometric modeling methods for crafting intricate designs.  
Demonstrate a deep understanding of generative techniques applicable to design.  
Apply critical thinking to solve complex challenges in architectural design.  
Evaluate and justify design choices through rigorous analysis and reasoning.

#### Student Performance Criterion addressed (list number and title):

Primary - A.4 Architectural Design Skills; A.5 Ordering Systems; A.6 Use of Precedents; Secondary - A.2 Design Thinking Skills; A.4 Architectural Design Skills; A.5 Ordering Systems; A.6 Use of Precedents;

#### Topical Outline (include percentage of time in course spent in each subject area):

Studio Work (40%):  
In-class application of Generative Geometric Modeling techniques.  
Formative exercises for analytical thinking and hands-on practice.  
Lecturing and Seminar Sessions (20%):  
Theoretical foundations and discussions on generative techniques.  
Critical thinking insights for architectural challenges.  
Tutoring and Critics (15%):  
Individualized guidance during designated sessions.  
Critical reviews for skill enhancement.  
Design Independent Work (10%):  
Application of concepts during studio hours and beyond.  
Encouraging self-driven exploration.  
Final Review (5%):  
Comprehensive assessment of understanding and application.  
Evaluation of critical thinking in solving architectural challenges.  
Readings and Investigative Work (10%):  
Assigned literature and independent investigation.  
Supporting critical analysis and reasoning.

#### Prerequisites:

DGC212 - Geometric and Generative Modelling; It does not have;

#### Textbooks/Learning Resources:

Antunes, Eduardo, Pedro Gomes Januário, e Paulo Pereira. (2021). "Three-Dimensional Reconstruction within the Crypto-History of Architecture, for the Historical-Cultural (Re)Interpretation of Architectural Heritage in

Portugal." Em Tradition and Innovation, Maria João Pereira Neto, Maria do Rosário Monteiro, Mário Ming Kong (Eds.), CRC Press. <https://doi.org/10.1201/9780429297786>.

Faísca, Ana Rute, e Pedro Gomes Januário. (2022). "How Creations Can Control Minds: The Railway Stations of the Dictatorial Regime in Portugal." Em Creating Through Mind and Emotions (PHI 2021), Mário Ming Kong, Maria Rosário Monteiro, Maria João Pereira Neto (Eds.), CRC Press, 149-155.

<http://doi.org/10.1201/9780429299070-19>.

Kong, Mário Say Ming, e Pedro Gomes Januário. (2015). Paper Architecture and Parametric Design Workbook. Oresta Remeshylo-Rybchynska (Ed.), Lviv Polytechnic Publishing House.

Monteiro, Verner, Maísa Veloso, e Pedro Gomes Januário. (2022). "The Material Dimension in Parametric Design Processes: An Analysis in Three Building Scales." Em Arquitetura, Cidade e Paisagem Projetar em Contexto de Crise, Jorge Cruz Pinto, Hugo Farias, Ljiljana Cavic, e Luís Miguel Ginja (Eds.), CIAUD - Centro de Investigação em Arquitetura, Urbanismo e Design - Faculdade De Arquitetura, Universidade De Lisboa.

<https://projetar2021.wixsite.com/lisboa/publicação>.

Monteiro, Verner, Marisa Veloso, e Pedro Gomes Januário. (2021). "Constructability in Parametric Design Process: The Impact of Collaboration between Architects and Civil Engineers." Em Tradition and Innovation, Maria João Pereira Neto, Maria do Rosário Monteiro, Mário Ming Kong (Eds.), CRC Press.

<https://doi.org/10.1201/9780429297786>.

**Offered (semester and year):**

2nd Year - Spring;

**Faculty assigned (list all faculty assigned during the two academic years prior to the visit):**

Luís Miguel Cotrim Mateus; Pedro Miguel Gomes Januário;