NAAB International Certification

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

Number & Title of Course (total credits awarded):
ELDGC4&504 - Introduction to Theory and History of Computation in Architecture - Semester - ECTS - Cicle/Profile: - Scientific Area:

Course Description (limit 25 words)
Introduces a support design using a generative computational process in their theoretical/practical components. Introduces a paradigm of a computational process that considers visual aspects;

Course Goals & Objectives (list):
(1) Introduction to shape grammars: theory and applications in architecture, urbanism and design.
(2) Shape grammars in education.
(3) Form, shape analysis, shape computation, transformations in Euclidean space, algebras.
(4) Spatial relations, rules, labels, derivation, recursion, parameterization.
(5) Colour, weight, compound and descriptive grammars.
(6) Stylistic transformations.

Student Performance Criterion addressed (list number and title):
Primary - A.2 Design Thinking Skills; A.4 Architectural Design Skills; Secondary -

Topical Outline (include percentage of time in course spent in each subject area):
Lecturing, 50%
Readings; 15%
Tutoring; 15%
Final Review; 20

Textbooks/Learning Resources:
Knight, T. W. (1989) Shape Grammars in Education and Practice: History and Prospects. Internet Paper. http://www.mit.edu/~tknight/IJDC/
Knight, T. W. (1989) Color grammars: designing with lines and colors. Environment and Planning B:Planning and Design, 16, pp.417–449.
Knight, T. W. (1989) Transformations of De Stijl art: the paintings of Georges Vantongerloo and Fritz Glarner. Environment and Planning B: Planning and Design, 16, pp.51–98.
Stiny, G., (2006), Shape: Talking about seeing and doing. Cambridge, Mass.: MIT Press
Stiny G., and Gips J. (1972) Shape Grammars and the Generative Specification of Painting and Sculpture. C V Freiman (ed) Information Processing 71 (Amsterdam: North-Holland) 1460-1465. Republished in Petrocelli O R (ed) 1972 The Best Computer Papers of 1971: Auerbach, Philadelphia pp.125-135.

Offered (semester and year):
2nd Year - Fall;

Faculty assigned (list all faculty assigned during the two academic years prior to the visit):
Luís António dos Santos Romão;