



UNIVERSIDADE FEDERAL DO RIO GRANDE DO SUL
PROGRAMA DE PÓS-GRADUAÇÃO EM ENGENHARIA CIVIL:
CONSTRUÇÃO E INFRAESTRUTURA

Code:	PCI0044
Title:	REGENERATIVE DESIGN
Credits/number of hours per week:	3 (45 hours)
Level:	(x) Master (x) Doctorate

Short Description

Sustainable Buildings: design strategies aligned with the principles of regenerative design, with regard to: energy, materials, residues and water.

Sustainable Communities: design strategies aligned with the principles of regenerative design, with regard to: energy, materials, residues and water.

Objectives

To deepen studies and application of concepts and methods of design and construction, associated to the concept of sustainability, focusing on subjects, since the scale of the Building up to the urban scale, regarding such aspects as: low environmental impact construction materials; development of projects that respect the local climatic reality; use of sustainable energy sources; management of domestic residues; rational use of water and urban production of food.

Form of Evaluation of Student's Performance

The performance of **each student** will be evaluated considering his active participation in the classes, along the teaching period; and, as performance evaluation the student will have to write, on his own or as a group member, a monography or a paper, related to themes to be defined along the course. Such tasks should be developed in such a way to constitute possible references toward future studies, as well as envisaging possible publication in magazines or conference proceedings.



Type of activities contributing to the development of the course

Classes (either virtual or presential); assigned readings; seminars; invited lectures by specialist guests; technical visits and practical activities.

Student evaluation criteria

Work presentation at a Class Seminar: 30%

Practical work with the application of regenerative design principles: 70%

Program (contents of each class)

TOPICS ADDRESSED IN EACH MEETING WITH STUDENTS	Assigned time towards activities	
	Meeting number	Meeting number



Discipline presentation

Main Inspirations towards Regenerative Design:

John Lyle: Founder of the Center for Regenerative Design;
Christopher Alexander and his Pattern Language; **Jason McLennan:** leading the International Living Future Institute.

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4

JOHN LYLE:

1. Sustainability in the Neotechnic Era
2. Science, Project and Regeneration

2

8

JOHN LYLE:

3. Water: Going with the Flow
4. Waste as a Resource

3

12

JOHN LYLE

5. Strategies for Regenerative Design
6. Energy: The Heart of the Matter

4

16

Presentation of achievements by **Christopher Alexander**,
Lester Brown, **Bill Mollison** e **Fritjof Capra**.
Charles Landry: The Art of City Making
Christopher Mare: Oxymoron.

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ALEXANDER: A Pattern Language 1

1. Padrão 105: Solar orientation towards exterior spaces
2. Padrão 125: Seating stairs
3. Padrão 207. Appropriate materials
4. Padrão 230. Heating by solar radiation

6

24

ALEXANDER: A Pattern Language 2

11. Padrão 142. Sequence of Living Rooms
12. Padrão 192. Windows looking at the life outdoors
13. Padrão 221. Natural Doors and Windows
14. Padrão 246. Creepers

7

28

ALEXANDER: A Pattern Language 3

19. Padrão 159. Natural light coming from two sides in each Room
20. Padrão 180. Place close to the window
21. Padrão 222. Low seats by the window
22. Padrão 245. Floreiras Elevadas*

8

32

ALEXANDER: A Pattern Language 4

27. Padrão 74. Animals
28. Padrão 104. Site repair
29. Padrão 169. Terraced slope
30. Padrão 172. Garden growing wild

9

36

ALEXANDER: A Pattern Language 5

10

40



31. Padrão 25. Access to water 32. Padrão 51. Green streets 33. Padrão 60. Accessible green 34. Padrão 64. Pools and streams 35. Padrão 247. Paving with cracks between the stones		
ALEXANDER: A Pattern Language 6 51. Padrão 6. Country towns 52. Padrão 19. Web of shopping 53. Padrão 32. Shopping street 54. Padrão 46. Market of many shops 55. Padrão 87. Individually owned shops	11	44
Project presentation at a Seminar	12	48

References:

1. Alexander, Christopher. **A Linguagem de Padrões**. Editora A. Porto Alegre. 2013.
2. _____. **A New Theory of Urban Design**. Oxford Press. 1987.
3. Bill Mollison. **Permaculture: A Designers' Manual**. Tagari. 1988.
4. Brown, L.R. **Plan B 4.0 - Mobilizing to Save Civilization**. Norton. 2009.
5. Coyle, S. **Sustainable and Resilient Communities - A comprehensive Action Plan for Towns, Cities and Regions**. Wiley. 2011.
6. Gorgolewski, M, Komisar, J e Nasr, J. **Carrot City - Creating places for urban agriculture**. The Monacelli Press. New York. 2011.
7. Landry, C. **The Art of City Making**. Earthscan. London. 2008..
8. Lyle, John T. **Regenerative Design for Sustainable Development**. John Wiley & Sons. New York. 1994.
9. McLennan, J. **Textos de Trim Tab Magazine**. International Living Future Institute. Disponível em: <http://living-future.org/>. 2016.
10. Menegat, R e Almeida, G. **Desenvolvimento Sustentável e Gestão Ambiental nas Cidades - Estratégias a partir de Porto Alegre**. Editora da UFRGS. 2004,
11. Newman, P e Jennings, I. **Cities as Sustainable Ecosystems - Principles and Practices**. Island Press. 2008.
12. Newman, P e Kenworthy, J. **Sustainability and Cities - Overcoming Automobile Dependence**. Island Press. 1999.
13. Register, R. **Ecocities: building cities in balance with nature**. Berkeley Hills. 2002.