**ARCH 8630**

**Architecture, space and culture**

Spring 2015 – CRN 30486

Tuesdays and Thursdays, Room 260, Architecture West: 3.05-4.25

John Peponis

**Catalogue Description**: Accounts of the social functions of architectural space and associated design choices, across a variety of building types and scales of environmental design.

**Aims:**

This is a research oriented elective class, with two aims.

1. To introduce theories or architectural space and associated methods of spatial analysis that can be applied to: (a) model the human functions of buildings; (b) benchmark design alternatives; (c) evaluate competing designs to support design choices; (d) inform the design imagination.
2. Collectively pursue a particular research question, a different one each time the class is offered. The question to be addressed this year is how building design can support informal learning, creativity, innovation and the collaborative production of new knowledge in knowledge-based organizations. The question can be tackled at the scales of individual building design, interior design or design of clusters of linked buildings.

**Learning outcomes:**

The most important learning outcome of any ambitious research oriented courses is not easily assessable in the short term: helping to develop a fruitful way of thinking about a field of inquiry and an area of practice. This course is associated with the following particular learning outcomes that can be readily assessed.

1. Understanding the basic theoretical concepts that help us model the human functions of building layouts.
2. Understanding and ability to work with measures of spatial patterns such as: (a) visibility and accessibility; (b) integration/closeness centrality; (c) choice/betweenness centrality; (c) metric reach; (d) directional reach; (e) path overlap.
3. Ability to use computational tools for space syntax analysis, such as UCL DepthMap.

**Course assignments and course assessment:**

25% of the grade will be based on contributions to workshop sessions and class discussions. 75% of the grade will be based on the assessment of three class assignments.

Assignment 1 (25% of the course grade): Creation of a reasoned portfolio of building case studies.

Assignment 2 (25% of the course grade): Syntactic analysis of a sample of building layouts and/or space use patterns.

Assignment 3 (25% of the course grade): A final presentation incorporating the work completed for assignments 1 and 2 and advancing an argument on a topic to be developed by each student.

**Readings:**

Students will be expected to thoroughly read a small number of papers and book chapters to be discussed in class (7-10 texts).

**Prior knowledge and eligibility:**

No prior knowledge with the software for spatial analysis (UCL DepthMap) or statistical analysis (JMP pro 11) is assumed.

While designed for Master of Architecture and Ph.D. with a major in Architecture students, the course is open to Architecture undergraduates.

# Academic Integrity and Conduct

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. All Georgia Tech students should familiarize themselves with and abide by the Georgia Tech Honor Code <http://www.catalog.gatech.edu/rules/18/>.

Student work that presents the ideas or words of others as the student’s own adversely impacts the whole school and may lead to immediate dismissal. Academic dishonesty, including cheating, plagiarism, commissioning academic work by others, or performing academic work on behalf of another student, is strictly prohibited. All persons in the classroom are expected to behave with courtesy towards others and in a way that does not interfere with the regular conduct of the class. Cell phones are to be turned off when students enter the classroom and should remain off for the duration of class: <http://www.catalog.gatech.edu/rules/19/>

# Special Needs

Any student with a disability, that may require accommodation, should contact Office of Disability Services at 404-894-2563 or visit <http://disabilityservices.gatech.edu> to make an appointment to discuss his or her special needs and obtain an accommodations letter. He or she should also schedule an appointment to speak with the course instructor.

# Emergencies

In case of emergency (e.g., fire, accident, or criminal act), please call the Georgia Tech Police at 404-894-2500. Please note that Perry Minyard, IT Support Administrator for the College of Architecture, is also a firefighter and an Emergency Medical Technician (EMT) certified in performing CPR.

**Schedule**

6 January, Tuesday: Introduction. What do we mean by spatial culture? Design for knowledge work as the research question.

8 January, Thursday: Current ideas of office space. A discussion of recent articles (Harvard Business Review, New Yorker, Now York Magazine).

13 January, Tuesday: Introduction to space syntax – DepthMap “geometric visibility analysis”.

ASSIGNMENT 1 STARTS

15 January, Thursday: Introduction to space syntax – expanding on basic ideas.

20 January, Tuesday: Introduction to space syntax – DepthMap “axial analysis”.

22 January, Thursday: Introduction to space syntax – illustrating basic ideas.

27 January, Tuesday: Space and social networks at work. The work of Tom Allen.

29 January, Thursday: Space syntax analyses of work environments.

ASSIGNMENT 1 COMPLETED – ASSIGNMENT 2 STARTS

3 February, Tuesday: Syntactic analysis of knowledge-related work environments 1

5 February, Thursday: Syntactic analysis of knowledge-related work environments 2

10 February, Tuesday: Understanding organizations: conceptual frameworks 1

12 February, Thursday: Workshop 1- questions about ongoing work

17 February, Tuesday: Understanding organizations: conceptual frameworks 1

19 February, Thursday: Intelligibility and way finding 1

24 February, Tuesday: Workshop 2- questions about ongoing work

26 February, Thursday: Intelligibility and way finding 2

ASSIGNMENT 2 COMPLETED – ASSIGNMENT 3 STARTS

3 March, Tuesday: Buildings as cognitive data

5 March, Thursday: Reconceptualizing buildings as interfaces

10 March, Tuesday: Building design and interior design. The work of Shpuza

12 March, Thursday: Building design and campus design.

16 March-20 March SPRING BREAK

24 March, Tuesday: Applications of space syntax in design 1

26 March, Thursday: Applications of space syntax in design 2

ASSIGNMENT 3 DRAFT COMPLETED

31March, Tuesday

Class Presentations 1

2 April, Thursday

Class Presentations 2

7 April, Tuesday

Class Presentations 3

9 April, Thursday

Class Presentations 4

14 April, Tuesday

Class Presentations 5

16 April, Thursday

Final discussion/review

20-24 April REVIEWS WEEK

27 April – 1 May EXAM WEEK

**COA8630/ARCH4833**

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**Syllabus**

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**Minimum bibliography**:

Allen T J, Henn G n, 2007 *The organization and architecture of innovation : managing the flow of technology* (Elsevier ; Butterworth-Heinemann, Amsterdam ; Boston)

Congdon C, Flynn D, Redman M, 2014, "Balancing "me" and "we"" *Harvard Business Review* 92 50-57

Duffy F, 1974, "Office design and organizations: 1. Theoretical basis" *Environment and Planning B* 1 105-118

Duffy F, 1974, "Office design and organizations: 2. The testing of a hypothetical model" *Environment and Planning B* 1 217-235

Duffy F, Powell K, 1997, "Two traditions", in *The new office* (Conrad Octopus, London) pp 12-43

Gladwell M, 2000, "Designs for working" *New Yorker* 78

Hillier B, Penn A, 1991, "Visible Colleges: Structure and Randomness in the Place of Discovery" *Science in Context* 4 23-50

Kabo F W, Hwang Y, Levenstein M, Owen-Smith J, 2015, "Shared paths to the lab: a sociospatial network analysis of collaboration" *Environment and Behavior* 47 57-84

Peponis J, Bafna S, Bajaj R, Bromberg J, Congdon C, Rashid M, Warmels S, Zhang Y, Zimring C, 2007, "Designing space to support knowledge work" *Environment and Behavior* 39 815-840

Wineman J D, Hwang Y, Kabo F W, Owen-Smith J, Davis G F, 2014, "Spatial layout, social structure and innovation in organizations" *Environment and Planning B: Planning & Design* 41 1100-1112

**Additional bibliography**:

Allen T J, 1977 *Managing the flow of technology : technology transfer and the dissemination of technological information within the R&D organization* (MIT Press, Cambridge, Mass.)

Duffy F, 1992 *The changing workplace* (Phaidon Press, London)

Duffy F, Cave C, Worthington J, 1976 *Planning office space* (Architectural Press ;

Nichols Pub. Co., London New York)

Gyllenhammar P, G., 1977 *People at work* (Addison Wesley, Reading, MA)

Hillier B, 1996 *Space is the machine* (Cambridge University Press, Cambridge)

Hillier B, Hanson J, 1984 *The social logic of space* (Cambridge University Press, Cambridge)

Penn A, Desyllas J, Vaughan L, 1997, "The space of innovation. Interaction and communication in the work environment", in *Space syntax first international symposium*, University College London, London pp 12.11-12-24

Rashid M, Kampschroer K, Wineman J, Zimring C, 2006, "Spatial layout and face-to-face interaction in offices?a study of the mechanisms of spatial effects on face-to-face interaction" *Environment and Planning B: Planning and Design* **33** 825-844

Rashid M, Wineman J, Zimring C, 2009, "Space, behavior, and environmental perception in open-plan offices: a prospective study" *Environment and Planning B: Planning and Design* **36** 432-449

Sailer K, 2013, "Organizational learning and physical space - how office configurations inform organizational behaviors", in *Learning organizations. Extending the field* Eds A Berthoin Antal, T Meusburger, L Suarsana (Springer, Dordrecht, NL) pp 103-127

Sailer K M, Ian, 2012, "Social networks and spatial configuration - how office layouts drive social interaction" *Social Networks* **34** 47-58

Shpuza E, Peponis J, 2008, "The effect of floorplate shape upon office layout integration" *Environment and Planning B-Planning & Design* **35** 318-336

Steen J, Markhede H, 2010, "Spatial and social configurations in offices" *Journal of Space Syntax* **1** 121-132

Waber B, Magnolfi J, Greg L, 2014, "Workspaces that move people" *Harvard Business Review* ***92 68-77***