

# Special Seminar in Spatial Analysis

Spring Semester, 2019

Professor Jaepil Choi

This seminar deals with the analytical methodologies that examine architectural and urban spaces in a systematic and quantitative manner. The spatial analysis is a means to explore and extract cultural and social implications imbedded in the space. It has to be objectively done. In other words, it should be free from any socio-cultural biases that might have been based on a specific culture or society. Both the Visual Access and Exposure model and the Space Syntax model are the tools that can be used in such spatial analyses.

The objective of the seminar is to have students get acquainted with the theoretical backgrounds and methodological techniques of these two models for the spatial analysis of the architectural and urban spaces.

The seminar consists of reading the texts (specified below) and presentations of the existing research results. Each student is responsible to summarize a part of the reading materials. He or she is to present the summary in each class. At the end of the semester, each student is required to design and actually conduct his or her own research project using these two models. The research theme is open but it has to be confirmed by the professor.

The class evaluation will be based on:

Seminar Attendance:	10%
Quiz	10%
Student Summary of Reading Material:	30%
Student Seminar Participation:	10%
Student Research Projects:	40%
-----	
	100%

# Seminar Schedule

## Week 01 03/04 INTRODUCTION

- *What is spatial analysis?*  
Lecture by Prof. Choi

## Week 02 03/11 VAE MODEL

- *Introduction to VAE Model*  
Lecture by Prof. Choi

## Week 03 03/18 VAE MODEL

- *Introduction to Spatial Analysis & OPERA Tutorial*  
Lecture by Euisoon Ahn
- *Application to Crime Prevention & Wandering*  
Lecture by Prof. Choi

## Week 04 03/25 VAE MODEL

- *VAE Application Practice Results*  
Presentation by All Students

## Week 05 04/01 VAE MODEL

- *VAE Research Proposal*  
Presentation by All Students

## Week 06 04/08 Professor goes to US for NAAB Evaluation Visit

## Week 07 04/15 SPACE SYNTAX MODEL

- 최윤경. "제1장 건축공간의 사회적 의미." *사회와 건축공간*. 시공문화사, 2003.  
Presentation by Student A
- 최윤경. "제2장 도시의 공간구조" *사회와 건축공간*. 시공문화사, 2003.  
Presentation by Student B

## Week 08 04/22 SPACE SYNTAX MODEL

- 이상은. *주생활과 공간구조와의 관계에 따른 조선시대 상류주택 분석 (Analysis*

*of High-Class Traditional Houses: In the Context of the Relationship Between Living and Spatial Structure*). 서울대학교 건축학과 석사학위논문, 2002.

Presentation by Student C

- 임장현. 행정중심복합도시의 공간구조 분석에 의한 토지이용계획의 적합성 평가 (*Verifying Land-Use Conformance of Multi-Functional Administrative City Through Analysis of its Spatial Structure*). 서울대학교 건축학과 석사학위논문, 2014.

Presentation by Student D

#### Week 09 04/29 ERAM MODEL

- 최재필, 조형규, 최현철, 황용하. "인접행렬의 고유벡터 성분비를 이용한 공간분석 (*Spatial Configuration Analysis Using the Eigenvector Ratio of Adjacency Matrix*)."  
*대한건축학회논문집 (계획계)*. 제19권 제11호 (2003년 11월호), pp.61-69.

Presentation by Student E

- 최재필, 조형규, 최현철, 조영진. "확률과정에 기초한 ERAM 이론의 재해석 및 검증 (*Reinterpretation of ERAM Theory Based on a Stochastic Process and Its Empirical Test*)."  
*대한건축학회논문집 (계획계)*. 제20권 제11호 (2004년 11월호), pp.115-122.

Presentation by Student F

- 최재필, 조형규, 김민석. "공간의 가시성을 고려한 초대형 복합공간의 공간분석 (*Visibility ERAM Analysis of Multi-Complex Building*)."  
*대한건축학회논문집 (계획계)*. 제21권 제11호 (2005년 11월호), pp.93-100.

Presentation by Student G

#### Week 10 05/06 Children's Day Holiday

#### Week 11 05/13 SPACE SYNTAX & ERAM MODEL

- 최윤경. "제5장 움직임의 공간구조." *사회와 건축공간*. 시공문화사, 2003.

Presentation by Student H

- 최재필, 강범준, 김민석. "가시성 ERAM을 이용한 초대형 복합공간의 동선체계분석 (*Pedestrian Circulation Analyses Based on Visibility ERAM*)."  
*대한건축학회논문집 (계획계)*. 제22권 제12호 (2006년 12월호), pp.163-170.

Presentation by Student I

- 송나균, 여정태, 고동완. "공간구문론을 활용한 전통마을 여가공간의 보행동선

분석: 외암민속마을을 사례로 (*Visitor Circulation in Leisure Spaces Using Space Syntax: Focusing on Ouam Traditional Folk Village*)." 한국조경학회지. 제37권 제2호, pp.1-8.

[Presentation by Student J](#)

#### Week 12 05/20 Space Syntax

- 최윤경. "제2장 소비의 공간구조" 사회와 건축공간. 시공문화사, 2003.

[Presentation by Student K](#)

- 전용석. "프리미엄 아울렛 몰의 공간구조 비교분석에 대한 연구 (*A Comparative Analysis on Spatial Structure of Premium Outlet Malls*)."  
*건축학회논문집 (계획계)*. 제30권 제12호 (2014년 12월호), pp.49-57.

[Presentation by Student L](#)

- 김수영. 복합 상업시설의 내부가로 속성에 관한 연구 (*A Study on the Characteristics of Internal Streets within Mixed-Use Commercial Complexes*). 복합 상업시설의 내부가로 속성에 관한 연구. 서울대학교 건축학과 석사학위논문, 2013.

[Presentation by Student M](#)

#### Week 13 05/27 Space Syntax & ERAM

- *Space Syntax / ERAM Research Proposal*

[Presentation by All Students](#)

#### Week 14 06/03 Space Syntax Analyses in Housing

- 최재필. "공간구문론을 사용한 국내 아파트 단위주호 평면의 시계열적 분석: 수도권 4LDK 아파트 단위주호 평면계획을 중심으로 (*A Diachronic Analysis of the Unit Plan Changes in the Context of Space Syntax Model for the 4LDK Apartment Unit Plans in Metropolitan Seoul Area*)."  
*대한건축학회논문집* 제12권 제7호, pp.15-28.

[Presentation by Student N](#)

- 최재필. "한국현대사회의 주생활양식의 변화: 수도권 3LDK 아파트 주호 평면계획의 변천을 중심으로 (*Changes in Residential Lifestyles in the Contemporary Korean Society in the Context of the Changes in the 3LDK Apartment Unit Plans in the Metropolitan Seoul Area*)."  
*대한건축학회논문집* 제12권 제9호, pp.3-13.

#### Presentation by Student O

- 서유진, 최영준, 최재필. "아파트 단지 배치계획에서 나타나는 건축요소의 위계성에 관한 시계열적 분석 (*Chronological Analysis on the Hierarchy of Service Facilities as Seen in the Block Plans of Apartment Complexes*)."  
*대한건축학회논문집 계획계* 제30권 제11호, pp.105-115.

#### Presentation by Student P

#### Week 14 06/03

- *Spatial Analysis Models Summarized*  
Presentation by Prof. Choi

#### Week 15 06/10 Term Project 1

- *VAE Project*  
Presentation by All Students

#### Week 16 06/17 Supplementary Class (6 hours) Term Project 2

- *Space Syntax Project*  
Presentation by All Students

## Texts & References

Archea, John. *Visual Access and Exposure*. Doctoral Dissertation, Penn. State University, 1984.

Hillier, Bill. *Space is the Machine*. Cambridge University Press, 1996.

Hillier, Bill and Hanson, Julliene. *Social Logic of Space*. Cambridge University Press, 1984.

Hanson, Julliene. *Decoding Homes and Houses*. Cambridge University Press, 1998.

Choi, Jaepil. "The traditional characteristics reflected in the plan of modern apartment house in Korea." *Journal of Architectural and Planning Research*, Vol. 16, No.1, 65-77, 1999.

Choi, Jaepil. "An Exploratory Study of the Conceptualization of Architectural Tradition of Korea in Terms of the Koreans' Spatial Behavior." Wineman, J., Barnes, R. & Zimring, C. (Eds.), *The Cost of Not Knowing...* Washington DC: EDRA, 1986.

Choi, Jaepil. *A Cross-Cultural Study in the Context of Visual Access and Exposure Model*. Master's Thesis. Georgia Institute of Technology, 1983.

최윤경. *사회와 건축공간*. 시공문화사, 2003.