



2020학년도 1학기 강의계획안 (Syllabus)

교과목명 Course Title	Applied Geostatistics (응용 지구통계학)	학수번호- 분반 Course No.	G17604-01
개설전공 Department/Major	Climate and Energy Systems Engineering (기후-에너지시스템공학전공)	학점/시간 Credit/Hours	3.0 / 3.0
수업시간/강의실 Class Time/ Classroom	Monday 8, 9: 18:30 ~ 21:30 (Research Cooperation Building Classroom #401)		
담당교원 Instructor	Name : Baehyun Min (민 배 현)	Department(소속): Climate & Energy Systems Engineering (기후-에너지시스템공학전공)	
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면담시간/장소 Office Hours/ Office Location	Hours: Please make an appointment via email or cyber campus Location: Research Cooperation Building Office #404 (연구협력관 404호)		

I. 교과목 정보 Course Overview

1. 교과목 개요 Course Description

This course covers basic statistics for spatial analysis in the first half. Then, students will learn variogram and its modeling for spatial data analysis with separation distance, and several geostatistical kriging and non-kriging methods. Each student or team will have a class project and presentation.

2. 선수학습사항 Prerequisites

N/A

3. 강의방식 Course Format

강의 Lecture	발표/토론 Discussion/Presentation	실험/실습 Experiment/Practicum	현장실습 Field Study	기타 Other
100%	-	-	-	-

(위 항목은 실제 강의방식에 맞추어 변경 가능합니다.)

강의 진행 방식 설명 (explanation of course format): Powerpoint, Writing on the Whiteboard, & Simulation Exercises

4. 교과목표 Course Objectives

This class delivers key principles of spatio-temporal geostatistics including probability, random variable, variogram, kriging, and sequential simulation.



5. 학습평가 방식 Evaluation System

Relative evaluation Absolute evaluation Others : _____

- Explanation of evaluation system:

(아래 항목은 실제 학습평가방식에 맞추어 변경 가능합니다.)

- 상대평가 (Relative Evaluation)

- 지각 1회 = 결석 0.5회. 지각 여부는 수업 시작시간을 기준으로 함.
- 결석 3회 이하는 최종 성적에 영향 없음
- 결석 3회 초과부터는 결석 1회당 최종 성적에서 2점씩 감점 (지각은 1회당 0.5점 감점)
- 결석 10회 초과는 F 학점 부여

“Relative Evaluation” is the evaluation system of this course. You are encouraged to attend all class sessions. If you have any situation which prevents you from attending class (e.g., illness, family or personal issues, etc.), please let me know your absence via email or message at the Cyber Campus before class in advance. Three or fewer absences do not affect your grade. If you miss four days or more, however, every absence from the fourth absence deducts two points from your final score. Two late arrivals are equal to one absence. More than ten absences will force you to be given F grade by the university regulation.

중간고사 Midterm Exam	기말고사 Final Exam	퀴즈 Quizzes	발표 Presentation	리포트 Report	과제물 Assignments	참여도 Participation	기타 Others
30%	35%	%	%	%	20%	5%	%

* Evaluation of group projects may include peer evaluations.

II. Course Materials and Additional Readings

1. 주교재 Required Materials

Lecture Notes

최종근, 2013. 지구통계학, 시그마프레스.

2. 부교재 Supplementary Materials

Kitanidis, P.K., 1997. Introduction to Geostatistics: Applications to Hydrogeology, Cambridge University Press.

3. 참고문헌 Optional Additional Readings

N/A

III. 수업운영규정 Course Policies

* For laboratory courses, all students are required to complete lab safety training.



IV. 주차별 강의계획 Course Schedule

Week	Date	Topics & Class Materials, Assignments (주요강의내용 및 자료, 과제)
1주차	3.16. (Mon)	Introduction to Statistics & Geostatistics (통계학과 지구통계학) (Video Lecture)
2주차	3.23. (Mon)	Probability distribution & statistical terms (확률 분포와 지구통계 용어) (Video Lecture)
3주차	3.30. (Mon)	Data generation & visualization (자료 생성 및 시각화)
4주차	4.6. (Mon)	Conditional probability & Expectation (조건부 확률과 기댓값)
5주차	4.13. (Mon)	Variance and Covariance (분산과 공분산)
6주차	4.20. (Mon)	Probability density functions (확률밀도함수)
7주차	4.27. (Mon)	Spatial correlation types & definitions (상관관계)
8주차	5.4. (Mon)	Midterm Examination
9주차	5.11. (Mon)	Variogram & Stationarity (베리오그램과 불변성)
10주차	5.18. (Mon)	Variogram modeling (베리오그램 모델링)
11주차	5.25. (Mon)	Simple Kriging (단순 크리깅)
12주차	6.1. (Mon)	Ordinary Kriging (정규 크리깅)
13주차	6.8. (Mon)	Block Kriging (구역 크리깅)
14주차	6.15. (Mon)	Co-Kriging (공동 크리깅)
15주차	6.22. (Mon)	<i>Final Examination</i>
보강1 (필요시) Makeup Classes	(요일, 장소)	TBD
보강2 (필요시) Makeup Classes	(요일, 장소)	TBD

V. 참고사항 Special Accommodations

* 학칙 제57조에 의거하여 장애학생은 학기 첫 주에 교과목 담당교수와의 면담을 통해 출석, 강의, 과제 및 시험에 관한 교수학습지원 사항을 요청할 수 있으며 요청된 사항에 대해 담당교수 또는 장애학생지원센터를 통해 지원받을 수 있습니다.

According to the University regulation #57, students with disabilities can request special accommodation related to attendance, lectures, assignments, and/or tests by contacting the course professor at the beginning of semester. Based on the nature of the students' requests, students can receive support for such accommodations from the course professor and/or from the Support Center for Students with Disabilities (SCSD).

* 강의계획안의 내용은 추후 변경될 수 있습니다.

* The contents of this syllabus are not final—they may be updated.