2023학년도 1학기 강의계획안 (Syllabus)

교과목명 Course Title	Spatial Information Modeling for Climate and Energy Systems (기후에너지 공간정보모델링)	학수번호 -분반 Course No.	38541
개설전공 Department/Major	Climate and Energy Systems Engineering (기후.에너지시스템공학전공)	학점/시간 Credit/Hours	3.0 / 3.0
수업시간/강의실 Class Time/ Classroom	Tuesday 6 (15:30-16:45) / Research Cooperation Building B109 (연구협력관 B109) Thursday 4 (12:30-13:45) / Research Cooperation Building B109 (연구협력관 B109)		
담당교원 Instructor	Name : Baehyun Min (민 배 현)	Department: Climate & Energy Systems Eng. (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 aims to deliver key principles of geostatistics for spatial analysis and covers random variable and probability, variogram, and kriging.
(본 교과목은 공간 통계분석을 위한 지구통계학을 강의한다. 구체적으로 확률 변수와 확률, 베리오그램, 크리깅을 학습한다.)

2. 선수학습사항 Prerequisites

It is recommended to take the course "Carbon Energy (탄소에너지)," which was previously "Introduction to Energy Resources (자원공학개론)," as a prerequisite, but not mandatory.

3. 강의방식 Course Format

강의 Lecture	발표/토론 Discussion/Presentation	실험/실습 Experiment/Practicum	현장실습 Field Study	기타 Other
85%	%	15%	-	-

(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

- Statistics and Geostatistics
- Random Variable and Probability
- Spatial Correlation (e.g., Variogram)
- Spatial Estimation (e.g, Kriging)

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
40%	40%	%	%	%	15%	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

3. 참고문헌 Optional Additional Readings

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	2.28. (Tue)	0. Course Introduction (video lecture)
	3.2. (Thu)	1. Statistics and Geostatistics
2주차	3.7. (Tue)	2. Probability Theory Review
	3.9. (Thu)	2. Probability Theory Review
3주차	3.14. (Tue)	2. Probability Theory Review
	3.16. (Thu)	3. Exploratory Data Analysis
4주차	3.21. (Tue)	3. Exploratory Data Analysis
	3.23. (Thu)	3. Exploratory Data Analysis
5주차	3.28. (Tue)	4. Joint Distribution
	3.30 (Thu)	4. Joint Distribution
6주차	4.4. (Tue)	5. Spatial Correlation
	4.6 (Thu)	5. Spatial Correlation
7주차	4.11. (Tue)	5. Spatial Correlation
	4.13 (Thu)	5. Spatial Correlation
8주차	4.18. (Tue)	5. Spatial Correlation
	4.20 (Thu)	5. Spatial Correlation
9주차	4.25. (Tue)	** Midterm Examination **
	4.27 (Thu)	5. Spatial Correlation
10주차	5.2. (Tue)	5. Spatial Correlation
	5.4 (Thu)	5. Spatial Correlation
11주차	5.9. (Tue)	6. Spatial Estimation
	5.11 (Thu)	6. Spatial Estimation (Simple Kriging)
12주차	5.16 (Tue)	6. Spatial Estimation (Ordinary Kriging)
	5.18 (Thu)	6. Spatial Estimation (Block Kriging)
13주차	5.23. (Tue)	6. Spatial Estimation (Co-Kriging)
	5.25 (Thu)	6. Spatial Estimation (Universial Kriging)
14주차	5.30. (Tue)	7. Sequential Simulation (optional)
	6.1 (Thu)	7. Sequential Simulation (optional)
15주차	6.6. (Tue)	7. Sequential Simulation (optional) (video lecture) (Holiday – Memorial day)
	6.8 (Thu)	** Final Examination **
16주차		
보강1 (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.