강의계획서

검색조건 :

교양/교직/군사학	▼

첨성인기초 – 독서와토론	▼

조회

[수업시간][건물 및 교과구분 코드][검색]

[한글강의계획서보기]

[Syllabus]

Course Outline
This lecture will cover the basic concepts and principles of pattern recognition and introduce its various applications to help student understand what the pattern recognition is and how it can be used for their research.

Core Competencies		
Innovativeness	Reflection	Character
Creativity ☑ Convergence ☐	Critical Thinking ☐ Exploration ☑	Communication ☐ Responsibility ☐

Course Objectives

Competencies	Course Objectives	Representative Competence
Creativity	Problem define and solve	☑
Exploration	Find the best solution from many alternatives	☐

Prerequisites
digital signal processing

Recommended Subsequent Courses

speech signal processing

Grading Scale(100%)						
Attendance	Midterm Exam	Final Exam	Assignment	Presentation	Discussion	Others
0%	30%	30%	40%	0%	0%	0%

Evaluation Methods

(subject to change)

Attendance (10%)

Programming Homeworks (60%)

Term Projects (30%)

Textbook and Other References

Textbook: Pattern Recognition and Machine Learning (Christopher M. Bishop)

References:

*Thomas Mitchell (1997) Machine Learning. McGraw Hill Higher Education
*Trevor Hastie, Robert Tibshirani, and Jerome Friedman (2009) The Elements of Statistical Learning: Data Mining, Inference, and Prediction, Second Edition. Springer
*David J.C. MacKay (2003) Information Theory, Inference, and Learning Algorithms: Cambridge University Press (full text is available at http://www.inference.phy.cam.ac.uk/itprnn/book.html)
*Cover, T. M., and Thomas, J. A. (1991) Elements of Information Theory. New York: Wiley.

Notice to Students

Students need to attend at least 3/4 of the lectures to pass it.

Support Available for Disabled Students

Appropriate aids will be provided depending on the kinds of disabilities.

[Course Content and Schedule]

no	Unit Goals and Learning Content	Teaching Methods	Assignments and Research Questions	비고
1	Overview			
2	Introduction to Pattern Recognition			
3	Basic Probability Theory			

4	Bayesian Inference and Decision Theory			
5	Clustering Vector Quantization (VQ) Pattern Recognition using VQ			
6	Normal Distributions Gaussian Mixture Models (GMM)			
7	Expectation−Maximization (EM) Algorithm			
8	Midterm week (no class)			
9	Principal Component Analysis (PCA) Linear Discriminant Analysis (LDA)			
10	Support Vector Machines (SVM)			
11	Learning Theory Bayesian Parameter Estimation Overfitting and Cross−validation			
12	Multi−layer Perceptron (1/2)			
13	Multi−layer Perceptron (2/2)			
14	Project Presentation (1/2)			
15	Project Presentation (2/2)			

[Course Evaluation]

Categories	Questions	Note
Self−Rating	1.I participated actively in the course. 2.I have made a lot of effort while taking the course.	
Standard Questions	3.The course syllabus contained the detailed information about the operation of the course. 4.The professor ran the course according to the course syllabus. 5.The professor clearly stated the course plan in the first class. 6.The professor stated objectives of each lecture clearly and explicitly. 7.The professor stimulated my interest in the field. 8.The professor had expertise on the course contents. 9.The professor delivered the class contents adapting to student abilities and learning levels. 10.The professor used various teaching methods considering course contents. 11.The professor encouraged students to ask questions, and responded properly. 12.The professor gave assignments to deepen the course contents. 13.The professor provided meaningful and timely feedback on the students performances. 14.Overall, I would like to recommend this lecture to other students. 15.The course helped me to develop [the representative competency].	
Course Specific Questions	E−1. The course was taught in English. (5: over 80%, 4: over 60%, 3: 40−60%, 2: 20−40%, 1: under 20%) E−2. The course increased my English competency in the field.	
Optional Questions	I−1. The professor explained the course contents well. I−2. The professor gave a lecture in adjusting the intensity and tone of voice to deliver the course contents effectively.	

Cheating, plagiarism, and other dishonest practices will be punished as harshly as Kyungpook National University policies allow. The University specifies that cheating is grounds for dismissal. Penalties less severe may be imposed instead. A list of possible disciplinary actions is given below. Actions by the university:
- Failure in course
- Suspension from university for a designated period
- Expulsion from university