Hanyang ERICA Summer School
Office of International Affairs, Hanyang University ERICA
55 Hanyangdaihak-ro, Sangnok, Ansan, Gyeonggi-do, 15588, Korea
Tel. +82-31-400-4917 | hess@hanyang.ac.kr

2024 Course Syllabus

Course Information	Course Title(Eng)	Understanding of Artificial Intelligence	Course Category	*Elective Non-Major(General)*
	Course Title(Kor)	인공지능의 이해		
	Credit–Lecture-Lab	*3 credits-4.5 hrs-0 hrs*	Course Restrictions	N/A
	College/School	*International Summer School(ERICA)*	College/School Responsible	Foreign Exchange Program(Y0000341)
	Meeting Times	*9:00am–12:00pm 1:00pm-2:30pm 10times*	Electronic Attendance	*N*

Instructor Info	Department	Department of Artificial Intelligence	Name	Yongjae Yoo
	Contacts	+82-31-400-1022	E-mail	yongjaeyoo@hanyang.ac.kr
	Homepage	Milab.hanyang.ac.kr		
Course Type	Teaching Method	Offline lectures + Online materials in Class		

Course Description	This course offers basic introductory knowledges on artificial intelligence. Students will learn backgrounds of AI and practice them.
Course Objectives	Understanding basics on AI in class and practicing them by following basic online materials e.g., W3school, Datacamp, and Kaggle.
Notice for Students	*Students are required to have their own computing/coding environments (e.g., laptops). Google developer's crash course (fundamental course)*

	No.	Title	Author	Publisher	ISBN	Price(KRW)
Textbook					-	-

Evaluation	Evaluation Criteria	Percentage (%)	Evaluation Criteria	Percentage(%)
	Attendance	20	Quiz	
	Assignments	50	Mid-term Exam	
	Discussion		Final Exam	30
	Team Project		Participation	
	Other			Percentage(%)
	Total 100 %			

	Day	Title	Activity
Daily Lecture Plan and Assignments	1	What is AI?	Class 1: Terminology and definitions: data, learning, and AI Class 2: How a machine understands and processes data? Class 3: Python primer (can skip if you already know) Assignment: Hello world with Python!
	2	How AI works? – Understanding data	Class 1: Analogy between human and artificial intelligence Class 2: Understanding data: type, features, and preprocessing Class 3: Python primer (2)
	3	Basic ML – Regressions (1)	Class 1: Basic mathematics for ML Class 2: Linear Regression Class 3: NumPy and SciPy exercise Assignment: Regression with IRIS dataset
	4	Basic ML – Regressions (2)	Class 1: Polynomial regression Class 2: Multiple regressions Class 3: Data scaling
	5	Training, Testing, Cross-validations	Class 1: Training, testing, and validation of ML models Class 2: Cross-validation Class 3: Data visualization Assignment: IRIS dataset – validation and visualization
	6	Clustering and Classification	Class 1: Clustering and Classifier, Supervised/unsupervised learning Class 2: Decision tree, hierarchical clustering, and confusion matrix Class 3: Categorical data
	7	Basic Classifier	Class 1&2: Logistic regression, K-means, K-nearest neighbors Class 3: AUC-ROC curve Assignment: MNIST classification, K-means/K-nearest
	8	Neural Networks	Class 1&2: Support Vector Machines (SVM) Class 3: Python SVM Assignment: MNIST – SVM
	9	Neural Networks	Class 1&2: Support Vector Regression using Scikit Learn Class 3: Review
	10	Final Exam	Class 1: Text exam Class 2: Coding exam