



## Korea University International Winter Campus (KU IWC) 2021-2022

*Join our winter, cherish your winter*

December 27, 2021 ~ January 14, 2022

### IWC420 – Course Title

#### I . Instructor

Professor	:	Joongheon Kim
E-mail	:	<a href="mailto:joongheon@korea.ac.kr">joongheon@korea.ac.kr</a>
Home Institution	:	School of Electrical Engineering
Class Time	:	09h00-12h00
Office	:	Engineering Building #214
Office Hours	:	Monday 12h00-13h00

#### II . Textbook

Required Textbook	:	Not required. The PDF materials will be distributed.
Recommended Additional Readings	:	N/A

#### III . Course Description and Objectives

This course is for understanding basic concepts and theories of artificial intelligence (AI) and deep learning research (DL). Following AI/DL items will be covered in this class, i.e., binary classification, multi-level classification, artificial neural network, convolutional neural network (CNN), generative adversarial network (GAN). Furthermore, the python-based exercises with tensorflow, keras, and pytorch will be conducted.

#### IV . Grading

Midterm Exam	:	30
Final Exam	:	50
Assignments	:	10
Participation	:	10

#### V . Class Outline

Date	Topic	Chapter	Remarks
Dec 27 (Mon)	Introduction to Artificial Intelligence		
Dec 28 (Tue)	Supervised Learning: Linear Regression		
Dec 29 (Wed)	Binary Classification		

Dec 30 (Thu)	Multinomial Softmax Classification		
Dec 31 (Fri)	Artificial Neural Network (Theory)		
Jan 3 (Mon)	Artificial Neural Network (Exercise)		
Jan 4 (Tue)	Artificial Neural Network (Practices)		
Jan 5 (Wed)	<b>MIDTERM EXAM</b>		
Jan 6 (Thu)	Convolutional Neural Network (Theory)		
Jan 7 (Fri)	Convolutional Neural Network (Exercise)		
Jan 10 (Mon)	Convolutional Neural Network (Practice)		
Jan 11 (Tue)	Generative Adversarial Network (GAN)		
Jan 12 (Wed)	PCA/LDA and Overfitting		
Jan 13 (Thu)	<b>FINAL EXAM</b>		
Jan 14 (Fri)	Discussion / Graduation Day		