# 1 교과목 개요서

| Course Name | artificial intelligence | School Year /Smester | 2021. 3~6 |
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| Name | RYU HOKYOUNG | Course Classification | Liberal Arts (3 credits) |
| Course Outline | In this course, students would learn to understand and apply the concepts and principles of artificial intelligence as a methodology required in one's own academic field, by which grasps how to apply the AI methodologies. In particular, they would learn the differences between human intelligence and artificial intelligence, overarching the cooperative intelligence between humans and computers.<br>The main topics to be covered include the differences between human intelligence (reasoning ability) and computer intelligence (predictive ability), principles and examples of implementation of computing intelligence, and methodology for knowledge representation, and develop them to a level that can be applicable in their own academic units. They will also understand the important theories about search, which is a numerical computing approach, statistical machine learning, and computational deep learning.<br>This course is not for a computer science course, but how the AI techniques can be applied across all the disciplines. Through this course, the students can understand the value of artificial intelligence, understand the decision-making that humans and artificial intelligence can collaborate with, so that the students can effectively use big data from their own academic fields | | |
| Evaluation Item | Individual task 50%<br>Study participation 20%<br>Medium test 15%<br>Final exam 15% (Minimum 60% for the 'Pass' grade, it may also be substituted by individual assignments) | | |
| Notice for Students | - Depending on the level of COVID-19 distancing, it can be switched to real-time video lecture, instead of the hologram lecture.<br>- This course is conducted in Smart-F (Flipped Learning: online 1 hour, offline 2 hours) type.<br>- Online learning activity: Pre-learning of the e-Learning content provided in the learning platform (attendance is to be checked by viewing the e-Learning content)<br>- Offline class: A hologram lecture will take place at the maximum 40 students in the HY-LIVE classrooms, as soon as the COVID-19 restrictions do ease.<br>- All the learning activity on the online courses (within the learning platform) will be assessed. | | |

| Week | Topic | Assignment | Class Type |
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| 1 | Introduction to Artificial Intelligence | Assignment 1 | Off-Line (HY-LIVE classroom) |
| 2 | Cores of AI | | ON 1+ Off-Line (HY-LIVE |

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| | | | classroom) |
| 3 | Human Intelligence vs. Artificial Intelligence: An cooperative approach | Assignment 2 | ON 1+ Off-Line (HY-LIVE classroom) |
| 4 | Scopes of AI | | ON 1+ Off-Line (HY-LIVE classroom) |
| 5 | Feature selection for AI | Assignment 3 | ON 1+ Off-Line (HY-LIVE classroom) |
| 6 | Problem-solving with features: Classification & Differentiation | | ON 1+ Off-Line (HY-LIVE classroom) |
| 7 | Utility function dictates search | Assignment 4 | ON 1+ Off-Line (HY-LIVE classroom) |
| 8 | **Midterm exam** | | |
| 9 | Problem definition | | ON 1+ Off-Line (HY-LIVE classroom) |
| 10 | Problem Search | Assignment 5 | ON 1+ Off-Line (HY-LIVE classroom) |
| 11 | Knowledge-based AI | | ON 1+ Off-Line (HY-LIVE classroom) |
| 12 | Probability and inference | Assignment 6 | ON 1+ Off-Line (HY-LIVE classroom) |
| 13 | Machine learns from data | Assignment 7 | ON 1+ Off-Line (HY-LIVE classroom) |
| 14 | Classification & Clustering | | ON 1+ Off-Line (HY-LIVE classroom) |
| 15 | Neural Network & Deep Learning | Assignment 8 | ON 1+ Off-Line (HY-LIVE classroom) |
| 16 | **Final exams (Assessment of tasks can replace final exams)** | | |

## 2. Textbook

1) Cognitive Psychology and Its Implications (8th Edition), John Anderson, Worth Publisher
2) Artificial Intelligence : A Modern Approach (4th Edition), Stuart Russell & Peter Norvig, Pearson Publishers