



# HANYANG UNIVERSITY

## Hanyang International Summer School

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| <b>Home University</b> | Hanyang University   |
| <b>Department</b>      | Finance department at the business school                              |

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| <b>Course Title</b>       | AI Basics  |
| <b>Field of Study</b>     | Business, organization, innovation, computer science, software   |
| <b>Credits</b>            | 3  |
| <b>Contact Hours</b>      | 45   |
| <b>Course Code/Number</b> | SOI1001  |
| <b>Course Description</b> | <p>Since an early flush of optimism in the 1950s, smaller subsets of artificial intelligence – first machine learning, then deep learning, a subset of machine learning – have created ever larger disruptions.</p> <p>The OECD defines an Artificial Intelligence (AI) System as a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments<br/> <a href="https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0449">https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0449</a>),</p> <p>This class introduces artificial intelligence (AI) and discusses its application to practical problems. Since AI covers machine learning and deep learning as the above figure illustrates, we will cover them as well.</p> |
| <b>Course Objective</b>   | This course would be easy and accessible. It <b>intuitively explains</b> the various computational and mathematical models to apply artificial intelligence to practical problems, such as optimization, application design, textual analysis, portfolio analytics, quantitative risk modeling, time series analysis, cross-sectional analysis, etc. Students will learn and use python for their  |

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|  | projects. Students are expected to come up with their own ideas for their projects.  |
| <b>Preparations (Pre-Knowledge)</b>    | This course is pretty introductory.  |
| <b>Materials (Textbook/ Materials)</b> | (1) John C Hull. Machine Learning in Business<br><a href="https://www-2.rotman.utoronto.ca/~hull/MLThirdEditionFiles/index3rdEd.html">https://www-2.rotman.utoronto.ca/~hull/MLThirdEditionFiles/index3rdEd.html</a><br>(2) Harvard business cases |

| Lesson Plan: Fill out the topic for each class in detail |                     |                                |
|--|---------------------|--------------------------------|
| Week 1   | 1 <sup>st</sup> Day | Orientation & Opening Ceremony |
|  | Class 1             | Class introduction             |
|  | Class 2             | Ch1                            |
|  | Class 3             | Ch2                            |
| Week 2   | Class 4             | Ch3                            |
|  | Class 5             | Special lecture                |
|  | Class 6             | Ch4                            |
|  | Class 7             | Ch5                            |
| Week 3   | Class 8             | Take home midterm exam         |
|  | Class 9             | Special lecture                |
|  | Class 10            | Ch8                            |
|  | Class 11            | Ch9                            |
| Week 4   | Class 12            | Case discussion                |
|  | Class 13            | Take home final exam           |
|  | Class 14            | Case discussion                |
|  | Class 15            | Final presentation             |

Evaluation (%)

\* Total sum of percentages should be 100%

\* Only below options are available, please do not change the form (fill out the given form)

| Assign-ments | Attenda-<br>nce | Final | Group<br>Project | Mid-<br>term | Participa-<br>tion | Present-<br>ation | Quiz | Total |
|--------------|-----------------|-------|------------------|--------------|--------------------|-------------------|------|-------|
| 20%          | 10%             | 20%   | 0                | 20%          | 10%                | 20%               | 0%   | 100%  |