



HANYANG UNIVERSITY

INTERNATIONAL SUMMER SCHOOL

* Please fill out the form completely in English in detail.

Name	Patrice Koehl
E-mail	koehl@cs.ucdavis.edu
Home University	University of California, Davis
Department	Computer Science

Course Title	AI+X: Introduction to Data Science
Field of Study	Data Science
Credits	3
Contact Hours	45
Course Code/Number	AIX0008
Course Description	<p>The course is an introduction to data science, intended for a general audience. The goal of the course is to understand how we can effectively use data and scientific reasoning when solving real-world, everyday problems. The course will provide an overview of the history of data science, the connection to machine learning and artificial intelligence. It will introduce fundamental data concepts, data engineering, big data principles, data visualization, and the role of ethics in data science practice. We will also focus on several special topics that illustrate the way humans interact with the world through data, such as natural language processing, computer vision, and human-computer interaction.</p>
Course Objective	<p>At the end of the course, students will be able to:</p> <ul style="list-style-type: none">• Understand the basics behind modern data science• Understand the history of data science, and its development from computer science, and statistics into its own separate field• Understand the connections of data science to AI and machine learning• Understand basic principles related to data, big data, human-computer interaction, And data visualization• Understand the role of ethics and privacy issues in the practice of modern data science



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Preparations (Pre-Knowledge)	None: the course is intended for a general audience; prior programming experience or statistical knowledge is not required.
Materials (Textbook/Websites link)	<ul style="list-style-type: none"> - Data Science (MIT press essential); Kelleher & Tierney - www.cs.ucdavis.edu/~koehl/Teaching/AIX0008

Lesson Plan: Fill out the topic for each class in detail		
Week 1	1st Day	Orientation & Opening Ceremony
	Class 1	History of Data Science (1)
	Class 2	History of Data Science (2)
	Class 3	Fundamental data concepts (1)
Week 2	Class 4	Fundamental data concepts (2)
	Class 5	Digital data
	Class 6	Reasoning about data
	Class 7	Data engineering (1)
Week 3	Class 8	Data engineering (2)
	Class 9	Machine Learning basics (1)
	Class 10	Machine learning basics (2)
	Class 11	Artificial Intelligence
Week 4	Class 12	Applications of Machine Learning and Artificial Intelligence
	Class 13	Ethics in data science: collecting data
	Class 14	Ethics in data science: Artificial Intelligence or Artificial Injustice?
	Class 15	The future of data science / final exam

Evaluation (%)



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* Total sum of percentages should be 100%

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

Assignments	Attendance	Final	Group Project	Mid-term	Participation	Presentation	Quiz	Total
30%		40%		30%				100%