



PYTHON PROGRAMMING AND MACHINE LEARNING

COURSE OVERVIEW

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Objectives

- Learn Python language and basic machine learning concepts
- At the end of the course, students will
 - Able to read and write programs in Python
 - Able to design and build RESTful web services using Python that manipulates database
 - Able to write machine learning code for regression, classification and clustering jobs in Python
 - Understand and able to follow a proper machine learning modelling process
 - Able to build a web service that expose a smart functionality

Prerequisites

- Programming Knowledge
 - You are assumed to master the basic programming concepts and object oriented programming
- HTML, JavaScript and ASP.NET MVC
 - You are assumed to be able to write simple web interface using ASP.NET MVC or other framework

Tentative Schedule

Day	Module
12-13 June (Hans)	Python Language Web Services Database Access
13-17 June (Yuen Kwan)	Machine Learning Process Regression Algorithms Classification Algorithms
18 June (Hans)	Clustering Algorithms
19-20 June (Hans)	Neural Network
21-24 June	CA Work
25 June	CA Presentation

- Topics covered from 12-25 June is worth 50 marks of Paper 5 - Mobile Application Development
 - 25 marks from Group CA
 - 25 marks from Exam

- Python Language:
 - Think Python by Allen Downey
 - <https://www.greenteapress.com/thinkpython/thinkpython.pdf>
 - Learn Python the Hard Way, by Zed Shaw
- Machine Learning
 - Introduction to Machine Learning with Python: A Guide for Data Scientists, by Sarah Guido and Andreas C. Muller

These books are listed to help you if you need some references. There is no requirement to buy these books since you probably won't be able to finish reading the books within the short duration. The books should help you to go much in-depth into the topics.

- UCI Machine Learning Repository
 - <https://archive.ics.uci.edu/ml/datasets.php>
- Kaggle
 - <https://www.kaggle.com/datasets>