# COURSE DETAIL

| MACHINE LEARNING AND PATTERN RECOGNITION |
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| **Country**<br>United Kingdom - Scotland |
| **Host Institution**<br>University of Edinburgh |
| **Program(s)**<br>University of Edinburgh |
| **UCEAP Course Level**<br>Upper Division |
| **UCEAP Subject Area(s)**<br>Computer Science |
| **UCEAP Course Number**<br>161 |
| **UCEAP Course Suffix** |
| **UCEAP Official Title**<br>MACHINE LEARNING AND PATTERN RECOGNITION |
| **UCEAP Transcript Title**<br>MACHINE LEARNING |
| **UCEAP Quarter Units**<br>8.00 |
| **UCEAP Semester Units**<br>5.30 |

**Course Description**
This course covers fundamental theoretical concepts in machine learning, and common patterns for implementing methods in practice. The precise set of methods and algorithms used to illustrate and explore the main concepts changes slightly from year to year, however the main topic headings are expected to be fairly stable and include classification and regression (linear regression, logistic regression, and Bayes classifiers); expanded feature representations (basis functions, neural networks, and kernel methods); generalization, regularization, and inference (penalized cost functions, Bayesian prediction, and learning theory); model selection, pruning, and combination (cross-validation, Bayesian methods, sparsifying regularizers, and ensemble methods); and representation and metric learning (dimensionality reduction, clustering, and feature learning). To support these topics the course also covers optimization and inference algorithms such as stochastic gradient descent, simple Monte Carlo ideas.

**Language(s) of Instruction**
English

**Host Institution Course Number**
INFR11130

**Host Institution Course Title**
MACHINE LEARNING AND PATTERN RECOGNITION

**Host Institution Course Details**
http://www.drps.ed.ac.uk/23-24/dpt/cxinfr11130.htm

**Host Institution Campus**
Edinburgh

**Host Institution Faculty**
School of Informatics

**Host Institution Degree**

**Host Institution Department**

**Course Last Reviewed**
2023-2024

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