Georg-August-Universität Göttingen	6 C
Module B.Inf.1236: Machine Learning	4 WLH

Learning outcome, core skills:	**Workload:**
Students	Attendance time:
- learn concepts and techniques of machine learning and understand their advantages and disadvantages compared with alternative approaches - learn techniques of supervised learning for classification and regression - learn techniques of unsupervised learning for density estimation, dimensionality reduction and clustering - implement machine learning algorithms like linear regression, logistic regression, kernel methods, tree-based methods, neural networks, principal component analysis, k-means and Gaussian mixture models - solve practical data science problems using machine learning methods	56 h Self-study time: 124 h

Course: Machine Learning (Lecture)	2 WLH
Bishop: Pattern recognition and machine learning. https://cs.ugoe.de/prml	

Examination: Written examination (90 minutes)	6 C
Examination prerequisites:	
B.Inf.1236.Ex: At least 50% of homework exercises solved and N-1 attempts presented to tutors	
Examination requirements:	
Knowledge of the working principles, advantages and disadvantages of the machine learning methods covered in the lecture	

Course: Machine Learning - Exercise (Exercise)	2 WLH
Contents:	
Students present their solutions of the homework exercises to tutors and discuss them with their tutors.	

Admission requirements:	**Recommended previous knowledge:**
none	Knowledge of basic linear algebra and probability
	English language proficiency at level B2 (CEFR)

Language:	**Person responsible for module:**
English	Prof. Dr. Alexander Ecker

Course frequency:	**Duration:**
each summer semester	1 semester[s]

Number of repeat examinations permitted:	**Recommended semester:**
twice	4

Maximum number of students:	
100	