

Overview of AI-related PhD courses in Norway relevant for NORA's research school - UiO

Course	ECTS	Department/Institute	Link	Short Description	Last taught	Course leader	Email
IN9495 – Advanced Topics in Artificial Intelligence for Intelligent Systems	5	Department of Informatics	https://www.uio.no/studier/emner/matnat/ifi/IN9495/index.html	The course goes in depth on selected topics and methods within artificial intelligence (AI), machine learning (ML) and their applications. Examples include computational intelligence algorithms in search, optimization and classification, which to a large extent consist of bio-inspired mechanisms.	Autumn 2020	Jim Tørresen	jimtoer@ifi.uio.no
IN9550 – Neural Methods in Natural Language Processing	10	Department of Informatics	https://www.uio.no/studier/emner/matnat/ifi/IN9550/index.html	This course studies a selection of advanced techniques in Natural Language Processing (NLP), with particular emphasis on recent and current research literature. The focus will be on machine learning and specifically 'deep' neural network approaches to the automated analysis of natural language text.	Spring 2020	Stephan Oepen	oe@ifi.uio.no
USi	10	Department of Informatics	https://www.uio.no/studier/emner/matnat/ifi/IN9520/index-eng.html	The course covers methods for analysis of digital images, segmentation, and object description. Central topics are feature extraction and classification of objects in images.	Autumn 2020	Fritz Albrechtsen	fritz@ifi.uio.no
TEK9010 – Multi-Agent Systems	10	Department of Technology Systems	https://www.uio.no/studier/emner/matnat/its/TEK9010/index-eng.html	This course gives you an introduction to systems with multiple agents/units/robots that mutually depend on each other's behaviors in order to evaluate own or collective system performance.	Autumn 2020	Hans Jonas Fossum Moen	h.j.f.moen@its.uio.no
TEK9030 – Computer Vision	10	Department of Technology Systems	https://www.uio.no/studier/emner/matnat/its/TEK9030/index-eng.html	Computer vision is the study of how a machine, such as an unmanned system, can interpret and understand its surrounding environment using visual data such as images and video.	Spring 2020	Idar Dyrdal	idar.dyrdal@its.uio.no
TEK9040 – Deep Learning for Autonomous Systems	10	Department of Technology Systems	https://www.uio.no/studier/emner/matnat/its/TEK9040/index-eng.html	The course focuses on advanced algorithms and architectures for deep learning with neural networks. The course provides an introduction to how deep learning techniques can be used to design important parts of advanced autonomous systems that exist in physical and cyber environments.	Autumn 2020	Narada Dilip Warakagoda	n.d.warakagoda@its.uio.no
MF9150 – Essentials of Neurophysiology: from neurons to circuits to behaviours	5	Faculty of Medicine	https://www.uio.no/studier/emner/medisin/med/MF9150/index.html	For students interested in the nervous system, this course in neurophysiology covers the basic principles of neuron signalling and interactions that underlie brain function, spanning from the function of individual neurons to the function of neuronal circuits that produce behaviour. [...] The course is also suitable for students from the fields of chemistry, biology, immunology, pharmacology, psychology, informatics and biotechnologov.	Spring 2020	Joel Glover	joel.glover@medisin.uio.no
MF9155 – Introduction to statistics and bioinformatics for the analysis of large-scale biological data	5	Faculty of Medicine	https://www.uio.no/studier/emner/medisin/med/MF9155/index.html	The course considers methods integral to data analysis in modern molecular medical research. It is planned that this course will be part 1 of a series of two courses on this topic. As such it is relevant to all PhD students and researchers who need to analyze large-scale molecular data themselves, as well as those who need to interpret results and understand publications in the molecular life sciences.	Autumn 2020	Manuela Zucknick	manuela.zucknick @medisin.uio.no
STK-IN9300 – Statistical Learning Methods in Data Science	10	Department of Mathematics	https://www.uio.no/studier/emner/matnat/math/STK-IN9300/index.html	Starting from the basic methods, the course will then cover more advanced procedures, specifically designed to tackle modern data challenges such as increasing complexity and large amounts of information (Big Data settings).	Autumn 2020	Riccardo De Bin	debin@math.uio.no
STK9011 – Statistical Inference Theory	10	Department of Mathematics	https://www.uio.no/studier/emner/matnat/math/STK9011/index.html	The course expands and is a thorough treatment of the theory of statistical inference introduced in earlier courses. The focus is treatment of point estimation and testing of hypotheses.	Autumn 2020	Johan Pensar	johanpen@math.uio.no
STK9051 – Computational Statistics	10	Department of Mathematics	https://www.uio.no/studier/emner/matnat/math/STK9051/index.html	Statistical analysis is becoming more and more complex, both because of bigger data and many types of data and because of the use of more advanced methods and models. This course deals with numerical methods for performing such analysis, both traditional and more modern methods.	Spring 2020	Geir Olve Storvik	geirs@math.uio.no
STK9060 – Time Series	10	Department of Mathematics	https://www.uio.no/studier/emner/matnat/math/STK9060/index.html	Estimation and testing of hypothesis with autoregressive processes and moving averages (i.e. ARMA-processes) and with stationary processes. Correlogram, periodogram, spectrum. State-space models (Kalman filter). Illustration on real data.	Spring 2020	Ingrid Hobæk Haff	ingrihaf@math.uio.no
STK9190 – Bayesian nonparametrics	10	Department of Mathematics	https://www.uio.no/studier/emner/matnat/math/STK9190/index.html	Statistical analysis involves first setting up a model for data in terms of certain unknown parameters. Bayesian analysis proceeds by placing a prior distribution on these parameters and then deriving and using relevant aspects of the consequent posterior distribution.	Autumn 2019	Nils Lid Hjort	nils@math.uio.no

STK9200 – Advanced Statistical Methods	10	Department of Mathematics	https://www.uio.no/studier/emner/matnat/math/STK9200/index.html	The precise contents of this course will vary, but will consist of selected themes of contemporary research in advanced statistical methodology.	Autumn 2019	Geir Olve Storvik	geirs@math.uio.no
INF9825 – Algorithms for Artificial Intelligence and Natural Language Processing	10	Department of Informatics	https://www.uio.no/studier/emner/matnat/ifi/INF9825/index.html	Foundational theory, with implementation in Common Lisp, concerning general techniques for searching, pattern matching, unification, knowledge representation, parsing and memoisation, with particular weight given to algorithms and data structures for the analysis of natural languages.	Autumn 2018	Stephan Oepen	oe@ifi.uio.no
IN9400 – Maskinl�ring for bildeanalyse	10	Department of Informatics	https://www.uio.no/studier/emner/matnat/ifi/IN9400/index.html	Emnet gir en innf�ring i teorien bak sentrale maskinl�ringsalgoritmer som brukes i bildeanalyse. Videre beskrives utvalgte metoder og verkt�y for dyp l�ring.	V�r 2020	Anne H Schistad Solberg	anne@ifi.uio.no
FYS-8012 Pattern Recognition	10	Department of Physics and Technology	https://uit.no/utdanning/emner/emne?p_document_id=670710	The course covers data analysis techniques such as Bayes classifiers, linea	Autumn 2021	Stian Normann Anfinsen	stian.normann.anfinsen@uit.no
FYS-8032 Health Data Analytics	10	Department of Physics and Technology			Autumn 2021	Michael Kampffmeyer	michael.c.kampffmeyer@uit.no
FYS-8033 Deep Learning	10	Department of Physics and Technology	https://uit.no/utdanning/emner/emne/696938/fys-8033	This course will study recent deep learning methodology such as e.g. convolutional neural networks, autoencoders and recurrent neural networks and provide the students with the required background and up-to-date knowledge to implement, train and debug these models. The students will gain hands-on experience on contemporary problems in image processing, pattern recognition and statistics.	Spring 2021	Michael Kampffmeyer	michael.c.kampffmeyer@uit.no
STA-8001 Computer-intensive statistics	10	Department of Mathematics and Statistics	https://en.uit.no/education/courses/course?p_document_id=696764	The course includes stochastic simulation, bootstrapping, Bayes theory, Lap	Spring 2021		
STA-8002 Multivariable Statistical Analysis	10	Department of Mathematics and Statistics	https://en.uit.no/education/courses/course?p_document_id=670531	The course gives a thorough introduction to the multivariate normal distributi	Autumn 2021		
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