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MODULE HANDBOOK

Module Name	Pembelajaran Mesin (Machine Learning)
Module level, if applicable	Master Program
Code, if applicable	MMS-5601
Subtitle, if applicable	-
Courses, if applicable	-
Semester(s) in which the module is taught	2/first year
Person responsible for the module	Chair of Statistics Laboratory
Lecturer(s)	Prof., Dr.rer.nat., Dedi Rosadi, S.Si., M.Sc.
Language	Bahasa Indonesia
Relation to curriculum	Elective for Master Degree in Mathematics
Teaching methods	3 hours lecture
Workload (incl. contact hours, self-study hours)	3 hours lectures, 6 hours individual study,14 weeks per semester, and total 126 hours per semester
Credit points	3
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	After completing this course, the students have ability to: CO 1. understand some fundamental concept in machine learning CO2.. use statistical software to do some machine learning task, in particular R CO3. Understand and be able to apply some supervised and unsupervised machine learning methods

Content	The course will introduce the main fundamental concepts in machine learning (supervised learning, training, scoring, accuracy measures, test set, overfitting, cross validation, model capacity, hyperparameter tuning, grid and random search, regularization, ensembles, model selection etc.). It will further discuss state-of-the-art algorithms for supervised learning (linear models, decision trees, neural networks, support vector machine, deep learning). A large part of the course will be dedicated to using (hands-on) the software tools for machine learning used by data scientists in practice (in R or Python).
Examination forms	Written exams and final project
Study and examination requirements	The weight of assignments will be as follows: 1. Quiz, home work, presentation 20% 2. Mid semester exam 40% 3. Final exam 40%
Media employed	online platform, Learning management system, LCD projectors, whiteboards.
Reading list	1. Hastie, T., Tibshirani, R., Friedman, J., 2016, The Elements of Statistical Learning (2nd Edition), Springer Verlag, New York 2. Provost, F. and Fawcett, T., 2019, Data Science for Business, O'Reilly 3. Ghatak, A., 2019, Deep Learning with R, Springer, London 4. Larose, D.T., Data Mining Methods and Models, Wiley-Interscience, New York

CO-PLO Mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7
CO 1	x						
CO 2		x					
CO 3			x				

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