MODULE HANDBOOK

Module designation	*Computational Intelligence*
Semester(s) in which the module is taught	*5*
Person responsible for the module	*Zuherman Rustam*
Language	*Indonesian*
Relation to curriculum	*Elective*
Teaching methods	*Lectures, group discussions*
Workload (incl. contact hours, self-study hours)	*(Estimated) Total workload: 8.5 hours x 14 weeks + 3 hours x 2 weeks* *Contact hours: 2.5 hours lectures per week* *Private study including examination preparation, specified in hours[1]:* *3 hours structured activities, and 3 hours individual study per week*
Credit points	*3 SKS (4.77 ECTS)*
Required and recommended prerequisites for joining the module	*Data Science*
Module objectives/intended learning outcomes	*After completing the course, students have the ability to implement machine learning algorithm to solve problems which needs a big data analysis.*

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[1]   When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Content	1. *C4.5 algorithm and its applications* 2. *K-Means clustering algorithm and its applications* 3. *Support vector machines (SVM) algorithm and its applications* 4. *Apriori algorithm and its applications* 5. *Expectation-Maximization algorithm and its applications* 6. *Page rank algorithm and its applications* 7. *AdaBoost algorithm and its applications* 8. *K-Nearest Neighbors algorithm and its applications* 9. *Naïve Bayes algorithm and its applications* 10. *Classification and Regression Trees (CART) algorithm and its applications*
Examination forms	1. *Class activities : Quiz, homework* 2. *Group discussion sessions* 3. *Mid-term examination* 4. *Final examination*
Study and examination requirements	*The final mark will be weighted as follows:* 1. *Homework (20%).* 2. *Written Quiz (20%).* 3. *Mid-term examination (30%).* 4. *Final examinations (30%).* *To succesfully pass the module it requires a minimum 55% of the total mark.* *Mark* *Grade* *85—100* *A* *80—<85* *A-* *75—<80* *B+* *70—<75* *B* *65—<70* *B-* *60—<65* *C+* *55—<60* *C* *40—<55* *D* *<40* *E*
Reading list	*X. Wu and V. Kumar, The Top Ten Algorithms in Data Mining. Chapman & Hall/CRC, 2009.*