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MODULE HANDBOOK

Module name	**Pattern Recognition**
Module level	Undergraduate
Code	MII21 2405
Courses (if applicable)	Pattern Recognition
Semester	Even (Genap)
Contact person	Prof. Drs. Agus Harjoko, M.Sc., Ph.D.
Lecturer	1. Prof. Drs. Agus Harjoko, M.Sc., Ph.D. 2. Ika Candradewi, S.Si., M.Cs.
Language	Bahasa Indonesia/English
Relation to curriculum	1. Undergraduate degree program, elective, 6th semester. 2. International undergraduate program, elective, 6th semester.
Type of teaching, contact hours	1. Undergraduate degree program: lectures, < 60 students, 2. International undergraduate program: lectures, < 30 students.
Workload	1. Lectures: 3 x 50 = 150 minutes (2 hours 30 menit) per week. 2. Exercises and Assignments: 3 x 50 = 150 minutes per week. 3. Self-study: 3 x 50 = 100 minutes per week.
Credit points	3 credit points (sks).
Requirements according to the Examination regulations	A student must have attended at least 70% of the lectures to sit in the exams.
Recommended prerequisites	Computer programming skill
Learning outcomes (course outcomes) and their corresponding PLOs	After completing this module, a student is expected to: CO1 Be able to explain Pattern recognition concepts and techniques in general. CO2 Be able to design and solve pattern recognition problems with data in the form of text CO3 Be able to design and solve pattern recognition problems with data in the form of one-dimensional (1D) signals CO4 Be able to design and solve pattern recognition problems with data in the form of two-dimensional signals (images) CO5 Be able to design and solve pattern recognition problems with data in the form of three-dimensional signals (video) CO6 Be able to cooperate in solving pattern recognition problems

PLO		CO1	CO2	CO3	CO 4	CO5	CO6
Program Learning Outcome (PLO)	**PLO1**						
	PLO2	√					
	PLO3		√	√	√	√	
	PLO4		√	√	√	√	
	PLO5						√

Contents	1. general pattern recognition concepts and techniques, 2. audio data features (1D signals) and processing, 3. image data features and processing, 4. video data features and processing, 5. detection methods and processing, 6. clustering methods, 7. classification methods, 8. identification and verification methods
Study and examination requirements and forms of examination	The evaluation is planned in 3 forms, namely: 1. Exam, either midterm or end of term test, 2. Individual assignments to be completed within a certain timeframe, and 3. Two quizzes, held on face-to-face, once before midterm exam and once after midterm exam, with a short answer form. 4. Term project Assessment is done using benchmark assessment, with the aim of measuring the level of student understanding related to the target and class rank.
Media employed	LCD, blackboard, and websites.
Assessments and Evaluation	

Type	Percentage	CO1	CO2	CO3	CO4	CO5	CO6
Quiz	5 %	√			√		
Individual Task	10 %		√	√			
Project Task	47,5 %		√	√	√	√	√
Midterm Exam	15 %		√	√			
Final Exam	22,5 %				√	√	
Total	100%						

Reading List	1. Pattern Classification (2nd. Edition) by R. O. Duda, P. E. Hart and D. Stork,Wiley 2002. 2. Pattern Recognition and Machine Learning by C. Bishop, Springer

	2006
	3. [Statistics and the Evaluation of Evidence for Forensic Scientists by C. Aitken and F. Taroni](#), Wiley, 2004.
	4. Course web site of the Department of Computer Science and Engineering, University of Buffalo, http://www.cedar.buffalo.edu/%7Esrihari/CSE555/ Chap1.Part1.pdf
	5. Information and dataset in http://kdd.ics.uci.edu/.
	6. R. Jain, R. Kasturi, B.G. Schunck, *Machine Vision*, Mc Graw-Hill, 1995.