Data Mining

Course Title: Data Mining					
Course Code: CIE61023	**Student Workload:** 8.50 Hours/ Weeks	**Credits:** 3 Credits (4.50 ECTS)	**Semester:** 5th Semester	**Frequency:** Odd Semester	**Duration:** 16 Weeks/ Semester (*Lecture and practical work*: 14 weeks; *Midterm assessment*: 1 week; *Final assessment*: 1 week)

1	**Types of Courses:** Content Knowledge Course	**Contact Hours:** *Lecturing*: 1.67 Hours/ Week; *Practical Work*: 2.83 Hours/ Week	**Independent Study:** *Self-study:* 2.00 Hours/ Week; *Structured Assignment*: 2.00 Hours/ Week	**Class Size:** 40 Students
2	**Prerequisites for Participation** (If Applicable)**:** Data Science Fundamental			
3	**Learning Outcomes:** 1. M1: Able to understand the fundamental of data mining conceptually, data mining technique, data type and processing in data mining, and its various roles in the educational context (ILO-4) (0,3) 2. M2: Able to choose suitable algorithms and programs for solving clustering, classification, and relations problems to help resolve obstacles in the educational practice context (ILO-5) (0,3) 3. M3: Able to build a data mining-based system to help improve the performance of the educational process in a scientific way (ILO-9) (0,2); (ILO-12) (0,2)			
4	**Subject aims/Content:** At the end of the course, students are expected: 1. L1: Able to explain concepts, basic techniques, tasks, general stages, and impacts of data mining in education as well as examples and applications (M1) 2. L2: Able to explain data type, data quality, initial data processing stages, similarity, and data distance (M2) 3. L3: Able to explain the concept of clustering and build one of the algorithms for solving clustering problems in the field of education (M3) 4. L4: Able to explain the concept of classification to build one of the algorithms for solving classification problems in the field of education (M4) 5. L5: Able to explain the concept of relationship mining and build one of the algorithms for solving relationship mining problems in the field of education (M5)			
5	**Teaching Methods:** Lecturing, Group Discussion, Case-Based Learning, Project-Based Learning			
6	**Assessment Methods:** Essay, performance test, anecdotal record/logbook, case assessment, project assessment			
7	**This Course is Used in The Following Study Programme/s as Well:** -			
8	**Responsibility for Course:** 1. Satrio Hadi Wijoyo, S.Si., S.Pd., M.Kom. 2. Satrio Agung Wicaksono, S.Kom., M.Kom. 3. Dr.Eng. Fitra Abdurrachman Bachtiar, S.T., M.Eng.			
9	**Other Information:** Bibliography: 1. Han, J., Kamber, M., Pei, J. (2011) Data Mining: Concepts and Techniques, 3rd Edition. Waltham, MA: Morgan Kaufmann, Elsevier. 2. Romero, Ventura, Pechenizkiy & Baker (2011) Handbook of Educational Data Mining.			

| | 3. Romero, C., & Ventura, S. (2010). Educational data mining: a review of the state of the art. IEEE Transactions on Systems, Man, and Cybernetics, Part C (Applications and Reviews), 40(6), 601-618. |
| | 4. Romero, C., & Ventura, S. (2020). Educational data mining and learning analytics: An updated survey. Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery, 10(3), e1355. |