**UNIVERSITAS NEGERI YOGYAKARTA**
POSTGRADUATE PROGRAM DEPARTMENT OF ELECTRONICS AND INFORMATICS ENGINEERING EDUCATION
Jalan Colombo Nomor 1 Yogyakarta 55281
Telepon: (0274) 586168 Pesawat 216, 289, 292; Fax. (0274) 586734
Laman: ft.uny.ac.id, E-mail: humas_ft@uny.ac.id



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| Module name: | Data Mining |
| Module level, if applicable: | Postgraduate |
| Code: | PTI 8223 |
| Sub-heading, if applicable: | - |
| Classes, if applicable: | - |
| Semester: | 2nd |
| Module coordinator: | Handaru Jati, M.M., M.T., Ph.D. |
| Lecturer(s): | Handaru Jati, M.M., M.T., Ph.D. |
| Language: | Bahasa Indonesia |
| Classification within the curriculum: | Elective Course |
| Teaching format / class Hours per week during the semester: | 100 minutes lectures and 120 minutes structured activities per week. |
| Workload: | Total workload is 90,67 hours per semester which consists of 100 minutes lectures, 120 minutes structured activities, and 120 minutes self-study per week for 16 weeks |
| Creditpoints: | 2 |
| Prerequisites course(s): | - |
| Course outcomes: | After taking this course the students have ability to:<br>CO1. Student be able to evaluate and implement a wide range of emerging and newly adopted methodologies and technologies to facilitate the knowledge discovery<br>CO2. Student be able to evaluate and implement a wide range of emerging and newly adopted methodologies and technologies to facilitate the knowledge discovery<br>CO3. Student be able to discover and measure interesting |

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<tr><td></td><td>patterns from different kind of databases<br>CO4. Student be able Characterize and discriminate data summarization forms and determine data mining functionalities<br>Student will be able to design and implement of a data mining application using sample, realistic data sets and modern tools<br>student will be able evaluate and select appropriate data mining algorithms and apply, and interpret and report the output appropriately</td></tr>
<tr><td>Content:</td><td>student will be able evaluate and select appropriate data mining algorithms and apply, and interpret and report the output appropriately</td></tr>
<tr><td>Study/exam achievements:</td><td>Summative assessments - tests, quizzes, and other graded course activities that are used to measure student performance. They are cumulative at the end of a unit or the end of a course. Within a course, summative assessment includes the system for calculating individual student grades, and formative assessmentâ€¯in the form of scientific paper by which students receive input and guiding feedback on their relative performance to help them improve. It can be provided face-to-face in office hours, in written comments on assignments, through rubrics, and through emails. The final mark will be weight as follow:
<table>
<tr><th>No</th><th>CO</th><th>Assessment Object</th><th>Assessment Technique</th><th>Weight</th></tr>
<tr><td>1</td><td>CO1 - CO4</td><td>Presentation of scientific paper</td><td rowspan="2">Assignment</td><td>50%</td></tr>
<tr><td>2</td><td>CO5 & CO6</td><td>Scientific paper</td><td>50%</td></tr>
<tr><td colspan="4">Total</td><td>100%</td></tr>
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</td></tr>
<tr><td>Forms of media:</td><td>LCD Projector, Laptop / Computer, White Board</td></tr>
<tr><td>Literature:</td><td>1. Data Mining: Practical Machine Learning. Tools and Techniques, Second Edition. Ian H. Witten and Eibe Frank.<br>2. Data Science from Scratch. by Joel Grus. Released April 2015. Publisher(s): O'Reilly Media, Inc. ISBN: 9781491901427<br>3. Olson, D.L., & Wu, D. 2020. Predictive Data Mining Models [2nd ed.]. Springer.<br>4. Shmueli, G., Bruce, P.C., Gedeck, P., & Patel, N.R. 2020. Data Mining for Business Analytics: Concepts, Techniques and Applications in Python. Wiley.<br>5. Kantardzic, M. 2020. Data Mining: Concepts, Models,</td></tr>
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| | Methods, and Algorithms. Wiley-IEEE Press.<br>6. Sengupta, N., & Sil, J. 2020. Intrusion Detection: A Data Mining Approach. Springer.<br>7. Rutkowski, L., Jaworski, M., & Duda, P. 2020. Stream Data Mining: Algorithms and Their Probabilistic Properties. Springer International Publishing.<br>8. Yang, X.S., & He, X.S. 2020. Nature-Inspired Computation in Data Mining and Machine Learning. Springer International Publishing.<br>9. Roger-Salazar, J. 2020. Advanced Data Science and Analytics with Python. CRC Press. |

**PLO and CO mapping**

| | PLO1 | PLO2 | PLO3 | PLO4 | PLO5 | PLO6 | PLO7 | PLO8 | PLO9 | PLO10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | | | | ✓ | ✓ | ✓ | | | ✓ | |
| **CO2** | | | | ✓ | ✓ | ✓ | | | ✓ | |
| **CO3** | | | | ✓ | ✓ | ✓ | | | ✓ | |
| **CO4** | | | | ✓ | ✓ | ✓ | | | ✓ | |
| **CO5** | | | | ✓ | ✓ | ✓ | | | ✓ | |
| **CO6** | | | | ✓ | ✓ | ✓ | | | ✓ | |