**UNIVERSITAS NEGERI YOGYAKARTA**
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
DEPARTMENT OF MATHEMATICS EDUCATION
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**Bachelor of Science in Mathematics** **MODULE HANDBOOK**

| | |
|---|---|
| Module name: | Fuzzy Set Theory |
| Module level,if applicable: | Undergraduate |
| Code: | MAT6340 |
| Sub-heading,if applicable: | - |
| Classes,if applicable: | - |
| Semester: | $6^{th}$ |
| Module coordinator: | Dr. Agus Maman Abadi |
| Lecturer(s): | Dr. Agus Maman Abadi |
| Language: | Bahasa Indonesia |
| Classification within the curriculum: | Elective Course |
| Teaching format / class hours perweek during the semester: | 150 minutes lectures and 180 minutes structured activities per week. |
| Workload: | Total workload is 136 hours per semester which consists of 150 minutes lectures, 180 minutes structured activities, and 180 minutes self-study per week for 16 weeks. |
| Creditpoints: | 3 |
| Prerequisites course(s): | Logic and Set (MAT6301) |
| Course outcomes: | After taking this course the students have ability to:<br>CO1. Demonstrate respect for other people's opinions in completing group and individual tasks<br>CO2. Communicate ideas in solving mathematical problems in writing or verbally.<br>CO3. Prove the properties of operation and relation in fuzzy |

<table>
<tr><td></td><td>set<br>CO4. Draw conclusions from a collection of fuzzy logic<br>CO5. Use fuzzy logic to solve related problems<br>CO6. Use software to solve related problems</td></tr>
<tr><td>Content:</td><td>This course contains the basic concepts of fuzzy sets, fuzzy set operations, alpha cut, fuzzy relations and fuzzy logic, and examples of applications in the control system, decision making and prediction.</td></tr>
<tr><td>Study/exam achievements:</td><td>Attitude assessment is carried out at each meeting by observation and / or self-assessment techniques using the assumption that basically every student has a good attitude. The student is given a value of very good or not good attitudeif they show it significantlycompared to other students in general. The result of attitude assessment is not a component of the final grades, but as one of therequirements to pass the course. Students will pass from this course if at least have a good attitude.<br><br>The final mark will be weight as follow:<br><br>
<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</td><td>presentation</td><td>Observation</td><td>10%</td></tr>
<tr><td>2</td><td>CO2, CO3 CO4 and CO5</td><td>a. Individual Assignment<br>b. Group Assignment<br>c. Mid<br>d. Quiz<br>e. Final Exam</td><td>Presentation / written test</td><td>25%<br><br>10%<br>20%<br>10%<br>25%</td></tr>
<tr><td colspan="4">Total</td><td>100%</td></tr>
</table>
</td></tr>
<tr><td>Forms of media:</td><td>Board, LCD Projector, Laptop/Computer</td></tr>
<tr><td>Literature:</td><td>1. Klir, G.J, Clair, U.S, Yuan B. 1997. Fuzzy Set Theory : Foundations and Applications. New Jersey : Prentice-Hall, Inc.<br>2. Wang, L.X..1997. A Course in Fuzzy Systems and Control. New Jersey : Prentice-Hall International, Inc.</td></tr>
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**PLO and CO mapping**

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