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FACULTY OF SCIENCE AND TECHNOLOGY
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Undergraduate Programme in Physics

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MODULE HANDBOOK

Module Name	Gravity and Magnetic Method
Module level, if applicable	Bachelor
Code, if applicable	FIS425052
Subtitle, if applicable	-
Courses, if applicable	Gravity and Magnetic Method
Semester(s) in which the module is taught	6th (sixth)
Person responsible for the module	Andi, M.Sc.
Lecturer(s)	Andi, M.Sc
Language	Indonesia
Relation to curriculum	Elective course in the third year (6th semester) Bachelor Degree
Type of teaching, contact hours	150 minutes lectures and 180 minutes structured activities per week.
Workload	Total workload is 136 hours per semester, which consists of 150 minutes lectures per week for 14 weeks, 180 minutes structured activities per week, 180 minutes individual study per week, in total is 16 weeks per semester, including mid exam and final exam
Credit points	3
Requirements according to the examination regulation	Minimum attendance 75% All assignments submitted Attendance on time
Recommended prerequisites	No prerequisites stated on
Module objectives/intended learning outcomes	After completing this course, the students: CO 1. Able to understand the ethics in utilizing natural resources using gravity and magnetic methods and build a framework of thinking as kholifih fil ardl in utilizing natural resources. CO 2. Able to explain the basic concepts of the Gravity method and be able to apply it in Gravity data processing. CO 3. Able to analyze gravity anomaly maps and be able to interpret the subsurface in accordance with geological conditions based on the gravity anomaly. CO 4. Able to explain the basic concepts of Magnetic methods and be able to apply them in Magnetic data processing. CO 5. Able to analyze magnetic anomaly maps and be able to interpret the subsurface in accordance with geological conditions based on the magnetic anomaly.
Content	1. Gravity Methods: Physical basis, Measurement of gravity, Gravity meters, Corrections to gravity observations, Interpretation methods, Applications and case histories 2. Geomagnetic Methods: Basic concepts and units of geomagnetism, Magnetic properties of rocks, The Earth's magnetic field, Magnetic instruments, Magnetic

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<table>
<tr><td></td><td>surveying, Qualitative interpretation, Quantitative interpretation, Applications and case histories</td></tr>
<tr><td>Study and examination requirements and forms of examination</td><td>The final mark will be weighted as follows:
<table>
<tr><th>NO</th><th>Assessment methods (components, activities)</th><th>Weight (percentage)</th></tr>
<tr><td>1</td><td>Final Examination</td><td>40%</td></tr>
<tr><td>2</td><td>Mid-Term Examination</td><td>30%</td></tr>
<tr><td>3</td><td>Class Activities : Quiz, Homework, etc.</td><td>30%</td></tr>
</table>
The final assessment is expressed in the form of a letter value converted from a number value with the following categories:
<table>
<tr><th>NO</th><th>Number Value</th><th>Letter Value</th><th>NO</th><th>Number Value</th><th>Letter Value</th></tr>
<tr><td>1</td><td>≥ 95</td><td>A</td><td>7</td><td>65-69.99</td><td>B/C</td></tr>
<tr><td>2</td><td>90-94.99</td><td>A-</td><td>8</td><td>60-64.99</td><td>C+</td></tr>
<tr><td>3</td><td>85-89.99</td><td>A/B</td><td>9</td><td>55-59.99</td><td>C</td></tr>
<tr><td>4</td><td>80-84.99</td><td>B+</td><td>10</td><td>50-54.99</td><td>C-</td></tr>
<tr><td>5</td><td>75-79.99</td><td>B</td><td>11</td><td>55-34.99</td><td>D</td></tr>
<tr><td>6</td><td>70-74.99</td><td>B-</td><td>12</td><td><35</td><td>E</td></tr>
</table></td></tr>
<tr><td>Media employed</td><td>White-board, Lcd Projector, e-learning (https://daring.uin-suka.ac.id/)</td></tr>
<tr><td>Reading list</td><td>1. Reynolds, Jhon M., 2011, An Introduction to Applied and Environmental Geophysics, Wiley-Blackwell, UK.
2. Telford, M.W., et al, 1976, Applied Geophysics, Cambridge University Press, UK.
3. Blakely, Richard J., 1996, Potential Theory in Gravity and Magnetic Applications, Cambridge University Press, UK.
4. Lowrie, William., 2007, Fundamentals of Geophysics, Cambridge University Press, UK.</td></tr>
</table>

PLO and CO Mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9
CO 1		√	√				√		√
CO 2		√	√				√		√
CO 3		√	√				√		√
CO 4		√	√				√		√
CO 5		√	√				√		√