12. Geospatial Database

Module Name	:	Geospatial Database
Module Level	:	Bachelor
Code, if applicable	:	23H06122502
Subtitle, if applicable	:	-
Courses, if applicable	:	Geospatial Database
Semester(s) in which the module is taught	:	IV (Fourth Semester)
Module coordinator(s)	:	Dr. Samsu Arif, M.Si.
Lecturer(s)	:	Dr. Samsu Arif, M.Si. and Aswar Syafnur, S.Si., M.Eng.
Language	:	Bahasa (Indonesian language)
Relation to curriculum	:	Elective course in the second year for Bachelor Degree in Geophysics
Type of teaching, contact hours	:	This course is delivered through Lectures (i.e., Project/Case-based learning), complemented by structured assignments (paper review, project/case evaluation) and independent study. Contact hours consist of 100 minutes lectures per week, plus 120 minutes per week for each of the following: structured assignments and independent study
Workload	:	Total workload is 90 hours per semester, consisting of 28 hours for lectures, and 31 hours each for structured assignments and independent study
Credit points	:	2 SKS (3.2 ECTS)
Requirements according to the examination regulations	:	Students are eligible to attend the examination if their absences are less than 20% of the lectures
Recommended prerequisites	:	-
Module objectives/intended learning outcomes	:	After completion of this module, students will be able to: CLO 1. Students are able to implement spatial analysis using GIS tools into the design of solving spatial problems and as support for decision making. The following is the mapping of the ILO and the CLO of this course:

	ILO 4	ILO 14
CLO 1	✓	✓

<table>
<tr><td></td><td></td><td></td></tr>
<tr><td>Content</td><td>:</td><td>1. Database System Concepts.
2. Database System Operations.
3. Data Models and Their History.
4. Database Design.
5. Spatial Functions and Metadata.
6. Integration with GIS.</td></tr>
<tr><td>Study and examination requirements</td><td></td><td>Participants are marked based on their performance in theory: Project/ Case Study (100%).

Students are marked based on their percentage of points obtained and based on the following grade scale:
<table>
<tr><th>Percentage of Achievement</th><th>Grade</th><th>Conversion Value</th></tr>
<tr><td>85 – 100</td><td>A</td><td>4.00</td></tr>
<tr><td>80 - <85</td><td>A-</td><td>3.75</td></tr>
<tr><td>75 - < 80</td><td>B+</td><td>3.5</td></tr>
<tr><td>70 - < 75</td><td>B</td><td>3.0</td></tr>
<tr><td>65 - < 70</td><td>B-</td><td>2.75</td></tr>
<tr><td>60 - < 65</td><td>C+</td><td>2.5</td></tr>
<tr><td>50 - < 60</td><td>C</td><td>2.00</td></tr>
<tr><td>40 - < 50</td><td>D</td><td>1.00</td></tr>
<tr><td>< 40</td><td>E</td><td>0.00</td></tr>
</table></td></tr>
<tr><td>Exams and assessment formats</td><td></td><td>Assessment in this course is conducted entirely through project/case studies. The project or case study is conducted in a group and requires students to apply theoretical concepts to analyze and solve a problem. This work is developed over several weeks under instructor guidance, culminating in a written report and an oral presentation of results.</td></tr>
<tr><td>Reading list</td><td>1.</td><td>Main References:

1. Howe, D, R, Data Analysis for Data Base Design, Edward Arnold, 1989</td></tr>
</table>

		2. Ramakhrisnan,R., Gerkhe, J. Database Management System, 2000 3. Rachmadi, Tri, Sistem Basis Data, 2020. Additional References: 1. STMIK PalComTech, Sistem Manajemen Basis Data.
Last revision date		July 1st, 2025