Spatial Information System

Module name	Spatial Information System	
Module level	Undergraduate	
Code	IF221205	
Courses (if applicable)	Spatial Information System	
Semester	5/6	
Lecturer	Yisti Vita Via, S.ST, M.Kom (PIC) Dr. Rr. Ani Dijah Rahajoe, S.T, M.Cs	
Language	Bahasa Indonesia and English	
Relation to curriculum	Elective; 5th or 6th semester	
Type of teaching, contact hours	Lectures, < 20 students,	
Teaching Methods	Simulation, case-study, project-based learning, and problem-based learning.	
Workload	1. Lectures: 3 sks x 50 = 150 minutes (2 hours 30 minutes) per week. 2. Exercises and Assignments: 3 x 60 = 180 minutes (3 hours) per week. 3. Private study: 3 x 60 = 180 minutes (3 hours) per week	
Credit points	3 credit points (sks)	
Requirements according to the examination regulations	A student must have attended at least 80% of the lectures to sit in the exams.	
Mandatory prerequisites	Software Engineering	
Courses description	In this course students learns about the concepts of Spatial Informationn System, which commonly referred to as Geographical Information System that relates to spatial data to form maps along with its features that aims to build a map model.	
Learning outcomes and their corresponding PLOs	After completing this module, a student is expected to:	
	CO1 Students are able to understand Spatial Information System Technology.	PLO9,PLO10
	CO2 Students are able to understand data forms, data integrations, and SIS format differences.	PLO9,PLO10
	CO3 Students are able to understand SIS application, map and its features, Web-based SIS concepts and able to create an example of it.	PLO9,PLO10
	CO4 Students are able to understand and give examples, discuss and demonstrate the data input of SIS/GIS Application for case study.	PLO9,PLO10
Content	Concepts of spatial information system, data forms, data storage, data integration, differences between SIS data format, and web-based SIS application.	
Media employed	LCD, whiteboard, websites, books (as references), online meeting, etc.	
Assessments and Evaluation	One written Midterm assessment (60 minutes) and one final oral exam (30 minutes), two short computer-based quizzes, takehome written assignments	

Study and examination requirements and forms of examination	The final grade in the module is composed of: • Two short computer-based quizzes: 15% x 2 = 30% • Take-home written assignments : 15% • Written Midterm assessment: 25% • Final oral exam: 30% Students must have a final grade of 55.6% or higher to pass.
Reading List	● M. J. de Smith, M. F. Goodchild, and P. A. Longley, *Geospatial Analysis: A Comprehensive Guide to Principles, Techniques and Software Tools*, 7th ed. Winchelsea: The Winchelsea Press, 2025. ● P. Bolstad, *GIS Fundamentals: A First Text on Geographic Information Systems*, 6th ed. XanEdu Publishing, 2020. ● C. Hafferty, R. Berry, and S. Ordford, “Geo-Information Tools for Stakeholder Engagement in Environmental Decision-Making: ‘Best Practice’ Recommendations from a UK Case Study,” presented at the *GIS Research UK Annual Conference*, 2021. ● D. O’Sullivan and D. Unwin, *Geographic Information Analysis*, 3rd ed. Hoboken, NJ: Wiley, 2020. ● E. Pebesma and R. Bivand, *Spatial Data Science: With Applications in R*, 1st ed. Boca Raton, FL: CRC Press, 2023.