Course Code	TKIT165201
Course Name	Specials Topics for Information Technology
Course Instructors	Lukito Edi Nugroho ; Silmi Fauziati ; Sri Suning Kusumawardani
Course Type	Elective
Course Classification	Engineering Topics
Credit / Contact Hour per Week	3 / 150 minutes per Week
Course Description	Topics Special Topics Information Technology discusses special topics (IT topics) in the field of IT aimed at a particular interest or is becoming a trend. These special topics need to be studied further and deeper so that the description of the scope and specificity of information technology applications can be better understood. The material outline is emphasized on the types of information technology and its characteristics, uses, and components that exist in each of these types and methods of development. The topics offered in this course may vary each semester depending on the focus, trend and development of IT (eg e-government, e-commerce, e-learning, spatial information systems, biomedical information systems, etc.). This course is optional for students of Electrical Engineering and Information Technology Study Program. Prerequisite subject does not exist. Learning materials are given in the form of classroom discussions, group discussion among students, exercises at the end of class sessions, and home tasks to find out the further utilization and implementation of specific information technology topics.
Prerequisites Courses	-
Covered Student Outcome	**Fundamental Engineering Knowledge (a)** **Development of Engineering Solution (b)** **Knowledge of Contemporary Issues (f)** **Engineering Awareness and Society (j)**

Learning Mapping

Code	Learning Outcome	Student Outcome
LO1	Students are able to understand and describing the process of transformation from data to information, then into knowledge and also produce wisdom.	Fundamental Engineering Knowledge
LO2	Students are able to implement the e-Learning using open source Moodle	Development of Engineering Solution
LO3	Students are ble to describe the representation of knowledge through Ontology and Semantic Web.	Knowledge of Contemporary Issues
LO4	Students are able to explain the concept of spatial data analysis, methods for relating spatial data, operators used in analyzing spatial data, explaining and discussing the use of statistical methods for analyzing spatial data, also explaining capacity analysis for spatial data.	Fundamental Engineering Knowledge
LO5	Students are able to discuss framework in analysis of spatial and temporal data combinations, such as Spatial Pattern Analysis, Spatial Interaction Analysis, Route and Network Analysis, Navigation and	Engineering Awareness and Society

		Tracking Object, Modeling and Visualization of maps, and Cellular Automata Models and Agent-based Models.	
	LO6	Students are able to explain the Global Positioning System (GPS), its forming segments and their usefulness, describes the functions and workings of GPS, discusses applications from GPS	Knowledge of Contemporary Issues

Topic	1. e-Learning 2. Health Informatics
Direct Asessment	

Direct Asessment Plan	**Measured Learning Outcome**
Mid Exam	LO1, LO2, LO3
Final Exam	LO4, LO5
Homework	LO6

Indirect Assesment	Questionnaire and direct communication
References	1. Duckham,, Goodchild, et.al., 2003, Foundations of Geographic Information Science, Taylor & Francis Group, United Kingdom. 2. French, G., 1996, An Introduction to the Global Positioning System: What It Is and How It Works, GeoResearch Inc., United States of America. 3. Haining, R., 2004, Spatial Data Analysis Theory and Practice, Cambridge University Press, United Kingdom. 4. Hilton, B., 2007, Emerging Spatial Information Systems and Applications, Idea Group Publishing, United States of America. 5. Konecny, G., 2003, Geoinformation Remote Sensing, Photogrammetry and Geographic Information Systems, Taylor & Francis Group, United 6. Richards, J., Jia,, et.al., 2006, Remote Sensing Digital Image Analysis An Introduction, Springer-Verlag Berlin Heidelber, Germany. 7. Ripley, B., 2004, Spatial Statistics, John Wiley & Sons, Inc., Canada. 8. Stair, R., Reynold, G., 2012, Fundamentals of Information Systems, Course Technology, Cengage Learning, United States of America. 9. Taylor, G., Blewitt, G.,2006, Intelligent Positioning: GIS-GPS Unification, John Wiley & Sons, United Kingdom. 10. Wang, F., 2003, Quantitative Methods and Applications in GIS, Taylor & Francis Group, United