Asian Institute of Technology  
School of Engineering and Technology

AT76.21  Data Modeling for Geospatial Information 1(1-0)  Semester: January

Course Objective: This course imparts knowledge about Data Modeling for Geospatial Information. It also aims to prepare students for more in-depth training in understanding what model and modeling is, what object orientation and UML is, how to describe UML diagram, and what ISO and OGC standard is.

Learning Outcomes:

The students on the completion of this course would be able to:

1. Identify and communicate concepts of data model and modeling.
2. Understand object orientation and UML, UML diagram.
3. Distinguish and evaluate Spatial and Temporal Schema, Application Schema, Metadata Schema, etc.
4. Develop understanding of international standards such as ISO.

Pre-requisite: None

Course Outline:

I. Introduction  
   1. Data model and modeling  
   2. Standards and ISO  
   3. UML  
   4. UML Diagram

II. Schema  
   1. Spatial Schema  
   2. Temporal Schema  
   3. Application Schema

III. Spatial Reference  
   1. Spatial Reference  
   2. Quality Assessment  
   3. Metadata

Learning Resources:

Text Books: No designated textbook, but class notes and handouts will be provided.
Reference Books:

**Martin Fowler:**

**David Arctur, Michael Zeiler:**

Teaching and Learning Methods:

Teaching and learning methods include lectures, class discussions, and brief hands-on exercises on the UML and data modeling of geospatial information to understand the basic knowledge and skills.

Time Distribution and Study Load:

Lecture: 15 hours
Assignment: 15 hours
Self-study: 45 hours

Evaluation Scheme:

Assignment: 50%
Final exams (closed book): 50%

An "A" would be awarded if a student can demonstrate the knowledge and technique learned in the class by explaining UML and data modeling of geospatial information through assignments and examinations. A "B" would be awarded if a student shows an overall understanding of all given topics, a "C" would be given if a student meets below average expectation on both knowledge acquired and application skills. A "D" would be given if a student does not meet basic expectations in understanding the topics and issues presented in course.

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