UNIVERSITY OF WARMIA AND MAZURY IN OLSZTYN

Faculty of Geodesy, Geospatial and Civil Engineering

Course title: SPATIAL DATA INFRASTRUCTURE

ECTS credit allocation (and other scores): 2.5

Semester: spring

Level of study: ISCED-7 - second-cycle programmes (EQF-7)

Branch of science: Engineering and technology

Language: English

Number of hours per semester: 45

Course coordinator/ Department and e-mail: Agnieszka Chojka, Ph.D., Department of Geoinformation and Cartography, agnieszka.chojka@uwm.edu.pl

Type of classes:classes and lectures

Substantive content

CLASSES: Preparation of UML application schema for specific application domain with the use of chosen CASE software, according to MDA. Processes of data harmonisation and exchange (technical aspect, procedures, process continuity, quality control). Rules and tools for INSPIRE datasets preparation. Geoinformation Services functionality and operation. Metadata description for spatial datasets. Thesauruses. XML Schema, XML files construction and validation. Preparation of GML application schema for specific application domain. UML to GML transformation software.

LECTURES: Theoretical aspects of geographic information description and management. Model Driven Architecture. Normalized approach to geographic information modeling. ISO 19100 series of International Standards. OGC and OMG specifications in the domain of geographic information. Rules for UML application schemas. Acts, specifications and implementing rules for construction of National Infrastructure for Spatial Information. Service Oriented Architecture. Geoinformation Services. Metadata. Thesauruses. Interoperable Data Exchange. XML and XML Schema. Rules for GML application schemas. UML to GML encoding rules.

Learning purpose: Acquaint student with problems concerning Spatial Data Infrastructures.

On completion of the study programme the graduate will gain:

Knowledge: Has extended and deeper knowledge in the range of programming, design and maintain geoinformation systems.

Skills: Can design and use components of geoinformation system, update and manage data in system and make data available.

Social Competencies: The graduate is aware of digitization of public life.

Basic literature: Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE); Booch G., Rumbaugh J., Jacobson I., The Unified Modeling Language User Guide, Addison-Wesley, 1998; Lake R., Burggraf D., Trninić M., Rae L., Geography Mark-up Language (GML), John Wiley&Sons Ltd., 2004.

Supplementary literature: Ambler S. W., The Object Primer, Third Edition. Agile Model-Driven Development with UML 2.0, Cambridge University Press, Cambridge, UK, 2004; Hurwitz J., Bloor R., Baroudi C., Kaufman M., Service Oriented Architecture for Dummies, Wiley Publishing, Inc., Canada, 2007; Kleppe A., Warmer J., Wim B., MDA Explained: The Model Driven Architecture: Practice and Promise, Addison Wesley, USA, 2003.

The allocated number of ECTS points consists of:

Contact hours with an academic teacher: 45

Student's independent work: 17.5