APPLICATION OF COMPUTER SCIENCE TO BUILDING STRUCTURES

KIERUNEK: BUDOWNICTWO - J. ANG

TYP STUDIÓW: IIst, stacjonarne, 1 rok, 2 sem. **WYKŁADOWCA:** dr inż. Jacek Magiera **ROK AKADEMICKI:** 2013/2014, sem. zimowy

The course consists of 15h of lectures and 15h of computer labs.

Course Programme

I. Lectures

- 1-2. Introduction to BIM. Ideas, definitions, implementations. Business advantages and deployment. CAD vs. BIM, parametric modeling, object oriented modeling, collision detection and project management
- 3-4. BIM object model, principles of its creation and its internal parametric relations. Constraints and relations. Modeling of a simple residential building.
- 5-6. Modeling of a simple commercial building in Revit Structures. Information management, analytical models.
- 7-8. Object families, modification of existing and development of new members families.
- 9-10. Massing environment in Revit. Terrain modeling, visualizations..
- 11-12. Advanced Revit topics: variants, options, stages.
- 13-14. Revit Extensions. Analytical models, loading and static analysis. Revit-Robot data exchange.
- 15. Test
- II. Computer labs
 - 1. Structural modeling of a residential building in Revit Structures
 - 2. Structural modeling of a residential building cont. Drawings. Plotting.
 - 3. Structural modeling of a commercial building in Revit Structures
 - 4. Structural modeling of a commertial building cont. Lists, loadong, analytical model. Sheet views and drafting.
 - 5. Defining custom object families and their application in modeling
 - 6. Advanced Revit topics: Variants, schedules, phasing
 - 7. Terrain modeling. Visualization and rendering. Static analysis of a slab. Grading

Grading

III. The final score will be a weighted average (50%/50%) of the scores received during lectures (based upon the scores of a test or – optionally – upon a presentation prepared by a student for selected topics) and computer labs

Teaching team

- Lectures: dr inż. Jacek Magiera,
- Computer labs: mgr inż. Radosław Kansy