

Title of Course	Computer Methods in Civil Engineering		
Semester	Autumn/Spring		
Teaching Hours per Course:	Total	- Lectures:	- Tutorials:
	15	15	0
ECTS Credits	1		
The content of education			
Aims of Course	The aim of the course is to learn about computational methods used in engineering calculations (including finite differences method and finite element method), including their algorithms and limitations, as well as practical skills in modelling engineering issues and solving them using computer programs. In addition, during the lectures, students will learn about basic issues and techniques related to BIM modelling technology.		
Program	<p>L1 – L7 BIM presentation (e.g.: Introduction to BIM technology. Basic terminology (model dimensionality, maturity levels, etc.). BIM compared to CAD. Features of models in BIM technology. Classification and standardization in BIM - IFC. BIM as a technology covering the whole process of investment and building life. Overview of BIM-compatible programs. Open systems. Main addressees of BIM technology: investor, designer, contractor, user. BIM in the design office, coordination of the design process. BIM on the construction site: supervision over the implementation, pre-dimensions, schedule control, cost control, coordination. BIM in operation and facility management. Coordination and inter-branch cooperation in BIM technology. Principles of creating a model in BIM technology. Objects, families of objects, relations, bonds, classification of objects. Features of objects and their modification. BIM model types. Development levels. LOD (Level of Detail/Level of Development) and LOI (Level of Information) specifications. Organization of work with the use of BIM technology.)</p> <p>L8 – W8 - Specificity of the application of the MES method in computer aspect</p>		
Conditions of completion	Passing the course requires preparation of a multimedia presentation devoted to the issue indicated by the course instructor and its written summary in text form (illustrative material not exceeding 20% is allowed). The presentation and its summary are made by groups of a size determined by the lecturer. The presentation is graded according to a standard grading scale and the grade is the same for all members of the group. This is also the final grade for the subject.		
Teacher	Grzegorz Sadowski, MSc		