



The Faculty of:	Electrical and Computer Engineering
Field of study:	Computer Science
Speciality:	EA
Study degree (BSc, MSc):	BSc

COURSE UNIT DESCRIPTION

Course title:	Basics of Software Engineering
Lecturer responsible for course: Grzegorz Dec, PhD	
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Department : Computer Science and Automatic Control	

Semester	Weekly load	Type of classes				Number of ECTS credits
		L Lectures	C Theoretical Classes	Lb Laboratory	P Project	
5	3	20		10		5

Course description
<p>Lecture:</p> <ol style="list-style-type: none"> 1. Software development techniques and methods. 2. Data modeling: entites, Entity Relationship Diagram (ERD). 3. Common data structures and generics ERD. Quality of an ERD. 4. Data Diagram. Conversion of an ERD into a Data Diagram. 5. Process modeling: indetification of business processes, function hierarchy, matrix diagram (CRUD). 6. Data Flow Diagram (DFD). Quality of process models. 7. Process Diagram. 8. Integrity of data models and process models. 9. The SADT method for real time systems modeling – TRG and STD diagrams. 10. Conversion of a Data Diagram into relational data base schema. 11. Process models and software modules. 12. Software development using Oracle CASE Method.
<p>Classes:</p>
<p>Laboratory:</p> <ol style="list-style-type: none"> 1. Data modeling using ERD. 2. Process modeling using DFD. 3. Real Time software: TRG and STD diagrams. 4. Reverse engineering. 5. Automatic SQL generation from an ERD.

Project:**Objectives of the course**

Modeling information systems using data models and process models. Converting models into software code.

Examination method

Laboratory: reports from the classes
Lecture: a written test

Bibliography

1. Barker R.: CASE Method. Modelowanie związków encji, WNT, Warszawa 2005.
2. Barker R., Longman C.: CASE Method. Modelowanie funkcji i procesów, WNT, Warszawa 1996.
3. Świder K., Dec G., Trybus B.: Inżynieria systemów informatycznych. Podstawy i praktyka budowy systemów oprogramowania, Oficyna Wydawn. PRz, Rzeszów 2004.
4. Yourdon E.: Współczesna analiza strukturalna, WNT, Warszawa 1996.

Lecturer signature	
Head of Department signature	
Dean signature	