STUDY MODULE DESCRIPTION FORM

Name of the module/subject	Code
Management of Transportation and Logistics Processes	**1010611351010600634**

Field of study	Profile of study (general academic, practical)	Year /Semester
Transport	**general academic**	**3 / 5**
Elective path/specialty	Subject offered in:	Course (compulsory, elective)
Logistics of Transport	**Polish**	**obligatory**

Cycle of study:	Form of study (full-time,part-time)
First-cycle studies	**full-time**

No. of hours	No. of credits
Lecture: **1** Classes: **-** Laboratory: **1** Project/seminars: **-**	**3**

Status of the course in the study program (Basic, major, other)	(university-wide, from another field)
other	**university-wide**

Education areas and fields of science and art	ECTS distribution (number and %)
technical sciences	**3 100%**
Technical sciences	**3 100%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	A student has an ordered, theoretically founded general knowledge in the field of technology, transport systems and various means of transport [T1A_W03]
2	**Skills**	A student is able to properly use information and communication techniques, which exist at various stages of transport projects [T1A_U02]
3	**Social competencies**	A student understands that skills in technology quickly become outdated [K1_K05]

Assumptions and objectives of the course:

The objective is to deliver a basic knowledge and practical skills on transportation and logistics process modelling and its simulation.

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. A student has a fundamental knowledge about directions of development referred to technical achievements and other related scientific disciplines, in transport engineering particularly - [T1A_W05]
2. A student knows the basic techniques, methods and tools applied into the decision making process in the field of transport, mainly of an engineering nature - [T1A_W07]

Skills:

1. A student is able to apply properly selected methods, including analytical, simulation or experimental methods, while formulating and solving decision problems in the field of transport - [T1A_U04]
2. A student has the ability to formulate decision problems in the field of transport engineering and is able to use at least one popular tools to solve it - [T1A_U11]
3. Student is able to organize, cooperate and work in a group, assuming different roles in it; student is also able to properly define the priorities in the process - [T1A_U18]

Social competencies:

1. A student can think and act in an entrepreneurial way, including finding commercial areas of application for the results, keeping in mind not only economy but also social benefits of the business - [T1A_K03]
2. A student correctly identifies and resolves dilemmas related to the transport engineer profession - [T1A_K05]

Assessment methods of study outcomes

A written test (a multiple-choice) is curried out at the end of semester. A result of labs is an average grade of all partial grades (short tests and tasks performed during classes).

Course description

1. Introduction

The process as a subject of interest; a review of process definition, definition of other concepts, incl. client, value added, process-oriented vs. functional-oriented enterprise, bottleneck. Concept of Business Process Management (BPM) lifecycle, key business process notations, review on IT support of BPM lifecycle.

2. Process modelling (applied EPC notation) - stage 1 of BPM lifecycle

Methodical basis of formal process description - EPC notation, concept of ARIS House, key principles of modelling according to EPC notation, connection of the process and organizational structure, hierarchy and processes structure, Value-added chin diagram (VACD) model, modelling of typical transport and logistics processes.

3. Process modelling (application of ARIS Architect and Designer) - stage 1 of BPM lifecycle

The functional issue of ARIS Architect and Designer - a database tool; ARIS Architect & Designer for process modelling using EPC notation, process reporting (e.g. human?s resource responsibility, a range of IT support, organizational barriers, etc.), ARIS database management.

4. Process configuration - stage 2 of BPM lifecycle

Definition of key functional process parameters (processing time, acceptable process costs, number of assigned workers, etc.), simulation-based verification of the process feasibility; business process parameterization. Simulation background, conversion of business process model (EPC notation) into simulation model; simulation technique. Key dynamic characteristics of the process (process efficiency, queue length, dynamic vs. static waiting time), simulation control, simulation run. Evaluation of simulation results, i.e. detailed vs. cumulative process statistics.

5. Simulation-based process improvement - stage 4 of BPM lifecycle

Analysis of the process changes, simulation-based scenarios of process improvement (what-if analysis), conducting process simulations, practical interpretation of the results.

6. Process improvement (change management) - stage 4 of BPM lifecycle

A scope of necessary changes in the existing configuration of a business processes, implementation of simulation results into practice.

7. Summary

Multiple-choice test

Basic bibliography:

1. Sawicki P., Zarządzanie procesami. Politechnika Poznańska, Poznań, 2019 (e-skrypt udostępniany na stronie: piotr.sawicki.pracownik.put.poznan.pl)

2. Davis R., Brabänder E., ARIS Design Platform. Getting started with BPM, Springer, 2010

3. Gabryelczyk R., ARIS w modelowaniu procesów biznesu, Difin, 2010

4. Sawicki P., Wielokryterialna optymalizacja procesów w transporcie, ITE, Radom, 2013

5. Scheer A.-W., ARIS ? Business Process Modeling, Springer, 2000

Additional bibliography:

1. Kowalska-Napora E., Projektowanie procesów logistycznych, Wydawnictwo Economicus, Szczecin, 2012

2. Nowosielski S. (red), Procesy i projekty logistyczne, Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu, Wrocław, 2008

3. Weske M., Business Process Management. Concepts, Languages, Architectures, Springer, 2012

4. Mel?o N., Pidd M., A conceptual framework for under-standing business process and business process modeling, Information System Journal, 2000, vol. 10, no. 2, s.105-129

Result of average student's workload

Activity	Time (working hours)
1. Preparation to the classes/labs	20
2. Participation into the classes (upon the plan)	30
3. Reporting	10
4. Consultations	3
5. Preparation to the exam / test	10
6. Participation in the exam	3

Student's workload

Source of workload	hours	ECTS

Total workload	76	3
Contact hours	36	1
Practical activities	49	2