



Module name: **Transport Management**

Academic year: **2019/2020** Code: **ZZIP-1-612-s** ECTS credits: **4**

Faculty of: **Management**

Field of study: **Management and Production Engineering** Specialty: **—**

Study level: **First-cycle studies** Form and type of study: **Full-time studies**

Lecture language: **English** Profile of education: **Academic (A)** Semester: **6**

Course homepage: **—**

Responsible teacher: **dr inż. Gdowska Katarzyna (kgdowska@zarz.agh.edu.pl)**

Module summary

Sustainable transport and logistics are crucial for modern economy. This course provides a review of the most important problems of transport management together with analytical tools and methods used for support decision making process in transportation management. Students are provided with the set of tools used for typical transportation problems. Students prepare a project which consists of identification, description, analysis and original solution (optional) to a transportation problem.

Description of learning outcomes for module

MLO code	Student after module completion has the knowledge/ knows how to/is able to	Connections with FLO	Method of learning outcomes verification (form of completion)
Social competence: is able to			
M_K001	be a leader of small project teams and to collaborate with professionals of different fields	ZIP1A_K03	Presentation, Execution of exercises, Execution of a project
M_K002	acquire knowledge by oneself	ZIP1A_K01	Test, Execution of exercises, Execution of a project
Skills: he can			
M_U001	use software tools to deal with transportation management problems	ZIP1A_U03, ZIP1A_U01	Execution of exercises, Execution of a project
M_U002	identify, describe, and solve transportation problems	ZIP1A_U03, ZIP1A_U02	Test, Execution of exercises, Execution of a project
Knowledge: he knows and understands			
M_W001	of managerial problems in transportation of people and goods	ZIP1A_W05	Test

M_W002	of processes, approaches, models, and tools used in transportation and logistics	ZIP1A_W05	Test
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Number of hours for each form of classes

Suma	Form of classes										
	Lectures	Auditorium classes	Laboratory classes	Project classes	Conversation seminar	Seminar classes	Practical classes	Fieldwork classes	Workshops	Prace kontrolne i przejściowe	Lektorat
60	30	0	0	0	0	0	0	0	30	0	0

FLO matrix in relation to forms of classes

MLO code	Student after module completion has the knowledge/ knows how to/is able to	Form of classes										
		Lectures	Auditorium classes	Laboratory classes	Project classes	Conversation seminar	Seminar classes	Practical classes	Fieldwork classes	Workshops	Prace kontrolne i przejściowe	Lektorat
Social competence: is able to												
M_K001	be a leader of small project teams and to collaborate with professionals of different fields	-	-	-	-	-	-	-	-	+	-	-
M_K002	acquire knowledge by oneself	-	-	-	-	-	-	-	-	+	-	-
Skills: he can												
M_U001	use software tools to deal with transportation management problems	-	-	-	-	-	-	-	-	+	-	-
M_U002	identify, describe, and solve transportation problems	-	-	-	-	-	-	-	-	+	-	-
Knowledge: he knows and understands												
M_W001	of managerial problems in transportation of people and goods	+	-	-	-	-	-	-	-	-	-	-
M_W002	of processes, approaches, models, and tools used in transportation and logistics	+	-	-	-	-	-	-	-	+	-	-

Student workload (ECTS credits balance)

Student activity form	Student workload
Udział w zajęciach dydaktycznych/praktyka	60 h
Preparation for classes	15 h
przygotowanie projektu, prezentacji, pracy pisemnej, sprawozdania	25 h
Summary student workload	100 h
Module ECTS credits	4 ECTS

Additional information

Module content

Lectures

Lectures cover following subjects:

1. Introduction – transportation of people and goods
2. Optimization in transportation problems
3. Transportation of people
 - 3a. Public transit systems
 - 3b. Transit service planning
 - 3c. Frequency and headways determination,
 - 3d. Timetable development
4. Transportation of goods
 - 4a. Transport systems – classification, requirements, network design and configuration
 - 4b. Transport costs and pricing
 - 4c. Vehicle routing
5. Sustainable transport and logistics
6. New trends in transportation of people and goods

Workshops

During classes students discuss and solve selected problems:

- 1 Warm-up – up-to date transportation problems described in substantial literature and professional journals – assignment
2. Combinatorial optimization models for transportation
3. Selected heuristics for transportation problems
4. Summary – presenting a transportation problem with own analysis and developed solutions
5. Final test – material presented during lectures and classes and assigned for self-study.

Teaching methods and techniques:

Lectures: lecture,
presentation,
discussion,
e-learning
Workshops: mini-lecture,
case-study,

presentation,
team-work exercise,
project,
e-learning,
discussion,
test

Warunki i sposób zaliczenia poszczególnych form zajęć, w tym zasady zaliczeń poprawkowych, a także warunki dopuszczenia do egzaminu:

1. All grades are calculated according to the scale compliant with the regulations of the AGH studies. A score of 50% is required to obtain the lowest positive grade (satisfactory, 3.0).
2. To pass the auditorium classes students need to obtain 50% of the TOTAL score calculated as a weighted average of scores from the test (0-100), assignment (1-100), project (1-100), and presentation (0-100) with following weights - test 40%, assignment - 10%, project - 30%, and presentation - 20%. Oral answers allow students to get additional points for the overall assessment.
3. Final grade of the course is equal to the final grade from the auditorium classes.
4. If the student does not obtain positive grade from classes at the required date, he/she is entitled to write a retake in a form agreed with the lecturer.

Zasady udziału w poszczególnych zajęciach, ze wskazaniem, czy obecność studenta na zajęciach jest obowiązkowa:

Lectures:

- Attendance is mandatory: No
- Participation rules in classes: Attendance in lectures is not mandatory, but highly recommended. Students actively listen to the lecture, and in case of any doubts are invited to ask questions or express their opinions. Students are invited to initialize discussion on topics most interested to them as well as to participate in discussions initialized by the lecturer. During the lecture, students should make their own notes, especially when solving tasks on the board. Learning materials for each lecture are available on the Moodle platform after every lecture. Students may be asked to get familiarized with additional materials for self-study (materials are available on the Moodle platform). It is not allowed to record or film a lecture without the consent of the teacher.

Workshops:

- Attendance is mandatory: Yes
- Participation rules in classes: Before the classes, students should prepare scheduled assignments and during the class present them to the group. Students are invited to participate actively in every task assigned to them during the class. Students are invited to consult any doubts on their choice of the project and presentation topics as well as their progress on the project execution. Students are invited to participate actively in 2 last classes in order to present their project and watch presentations of other teams.

Method of calculating the final grade

The final grade is calculated as the average of grades with the following weights:

Grade Weight
Test 40%
Assignment 10%
Project 30%
Presentation 20%

Sposób i tryb wyrównywania zaległości powstałych wskutek nieobecności studenta na zajęciach:

Absence from lectures or exercises needs to be made up by studying the issues discussed in the classroom with the help of lecture notes available on the e-learning platform. If someone omits the test, then have to write it on the date agreed with the lecturer. If someone is absent during the presentation, need to discuss the project with the teacher on the agreed date.

Prerequisites and additional requirements

Prerequisites and additional requirements not specified

Recommended literature and teaching resources

Timm Gudehus, Herbert Kotzab, Comprehensive logistics, Berlin ; Heidelberg : Springer, 2009.

Juan de Dios Ortúzar, Luis G. Willumsen, Modelling transport, Chichester : John Wiley & Sons, 2001.

Scientific publications of module course instructors related to the topic of the module

Katarzyna Gdowska, Ana Viana, João Pedro Pedroso, Stochastic last-mile delivery with crowdshipping, Transportation Research Procedia ; ISSN 2352-1465. — 2018 vol. 30, s. 90-100. —

Katarzyna Gdowska, Roger Książek, Urban transit network timetabling problem in terms of sustainable urban transportation, Selected aspects of sustainable engineering [VIII Krakow conference of young scientists : 26-28 September 2013], Krakow : Wydawnictwa AGH, 2016, s. 85-98.

Additional information

None