DISCIPLINE RECORD
Academic year 2025/2026

1. Information about the program

University	Constanta Maritime University
Faculty	Navigation and Maritime Transport
Department	Management in Transport
Domain of study	Engineering and Management
Academic level	Master
Study programme/ qualification	Business Administration in Transport

2. Information about discipline

Course title	Computers and IT in Business Transport					
Lecture tenured	Assoc. Prof. Simona DINU PhD					
Application tenured	Assoc. Prof. Simona DINU PhD					
Year of study	V	Semester	II	Type of examination	E	
Conditions of discipline	Course category: DF – Fundamental subjects, DS – Specialization subjects, DC – Complementary subjects					DS
	Course type: DOB – compulsory subjects; DOP – elective subjects; DFA – optional subjects					DOP

3. The total time estimated

I a) Number of hours per week	4	Course	2	Seminar	2	Laboratory		Project	
I b) Total hours per semester from the curriculum	56	Course	28	Seminar	28	Laboratory		Project	

II Time distribution for the semester:	ore
II a) Study after manual, course support, bibliography and notes	32
II b) Additional documentation in library, specialized electronic platforms	16
II c) Training seminars / labs, homework, essays, portfolios and essays	21
III Tutorial	2
IV Examinations	2
V Other activities:	

Total hours of individual study II (a+b+c)	69
Total hours per semester (Ib+II+III+IV+V)	129
Number of credits	5

4. Prerequisites (if necessary)

Curriculum	• Not necessary
Expected learning outcomes	• Ability to apply knowledge and methods specific to the field of specialization

5.Conditions (if necessary)

Progress of the course		• Classroom with Video projector • Online course: virtual campus cmu-edu.eu
Progress of application	Seminar	• Classroom with Video projector • Online course: virtual campus cmu-edu.eu
	Laboratory	•
	Project	•

6.Objectives of discipline (based on the grid of specific skills acquired – no7)

The overall objective of discipline	• Operating with scientific concepts and methods in computers and information technology

The specific objectives of discipline	• Development of practical capabilities for efficient use of IT techniques and tools for designing and implementing modern solutions in transport and logistics services industry

7. Expected learning outcomes:

No.	Knowledge	Skills	Responsibility and autonomy
1	The student is aware of trends and innovations in the transport sector.	The student conducts qualitative and quantitative market research.	The graduate leads initiatives to improve the quality of transport services.
2	The student masters ICT solutions applicable to business problems.	The student advises on strategic business decisions based on data analysis.	The graduate assumes responsibility for implementing ICT innovations.
3	The student masters techniques for data acquisition and processing.	The student evaluates business performance through financial indicators.	The graduate takes responsibility for continuous professional development.

8. Competences covered by the discipline, according to the diploma supplement

Professional competences	• Provides advice on efficiency improvements • Exercises results-oriented leadership towards colleagues • Focuses on innovation in current practices
Transversal competences	• Seek innovation in current practices • Propose ICT solutions to business problems

9.Contents

Course	Nr. hours	Teaching methods	Obs.
• Use of Information and Communication Technology (IT&C) for cooperative and collaborative business processes	2	Oral presentation using video projector, interacting with students in the classroom.	
• Implications of IT&C and e-business practices in transport and logistics services industry	2	Oral presentation using video projector, interacting with students in the classroom.	
• Information as a component of intelligent transport systems - role of information to support decision-making with regard to travel and transportation	2	Oral presentation using video projector, interacting with students in the classroom.	
• Current business transportation problems formulation using modeling and simulation techniques	2	Oral presentation using video projector, interacting with students in the classroom.	
• Advanced methods of modelling, simulation and optimisation through IT&C solutions	4	Oral presentation using video projector, interacting with students in the classroom.	
• The role of IT&C in supporting decisions to locate service infrastructure for the efficient design and operation of a supply chain	2	Oral presentation using video projector, interacting with students in the classroom.	
• Location-allocation problems in transportation networks – models and solution algorithms	4	Oral presentation using video projector, interacting with students in the classroom.	
• Variants and extensions of location-allocation problems; combined logistics models: location-allocation-routing-storage	2	Oral presentation using video projector, interacting with students in the classroom.	
• New approaches based on Computational Intelligence techniques in Business Transport: Evolutionary Computation - inspired by the evolution of biological species, Swarm Intelligence - inspired by the collective behavior of individuals and Fuzzy Logic	4	Oral presentation using video projector, interacting with students in the classroom.	

• Multiple criteria analysis and Computational Intelligence-based techniques in transportation and logistics	4	Oral presentation using video projector, interacting with students in the classroom.	

Bibliography

- Wang, Y and Pettit, S. „E-Logistics: Managing Digital Supply Chains for Competitive Advantage", Ed. Kogan Page Publishing, 2021.
- Sierpiński, G. and Macioszek, E. „Decision Support Methods in Modern Transportation Systems and Networks", Ed. Springer, 2021.
- Dinu, S. „Probleme de Amplasare - Alocare în Infrastructura Logistică: Modele Matematice și Soluții Informatice", Ed. Nautica, Constanta, 2016.
- Zak, J., Hadas, Y. and Rosssi, R. „Advanced Concepts, Methodologies and Technologies for Transportation and Logistics", Ed. Springer, 2018.
- Roeva, O. "Real-World Applications of Genetic Algorithms", Ed. InTech, 2012
- OECD „Transport Logistics Shared Solutions to Common Challenges: Shared Solutions", Ed. OECD, 2002

Selective bibliography

- Sierpiński, G. and Macioszek, E. „Decision Support Methods in Modern Transportation Systems and Networks", Ed. Springer, 2021.
- Dinu, S. „Probleme de Amplasare - Alocare în Infrastructura Logistică: Modele Matematice și Soluții Informatice", Ed. Nautica, Constanta, 2016.
- Course notes available on the platform campus.cmu-edu.eu

Application (Seminar / laboratory / project)	Nr. hours	Teaching methods	Obs.
• Use of Information and Communication Technology (IT&C) for cooperative and collaborative business processes	2	Oral presentation using video projector, interacting with students in the classroom.	
• Implications of IT&C and e-business practices in transport and logistics services industry	2	Oral presentation using video projector, interacting with students in the classroom.	
• Information as a component of intelligent transport systems - role of information to support decision-making with regard to travel and transportation	2	Oral presentation using video projector, interacting with students in the classroom.	
• Current business transportation problems formulation using modeling and simulation techniques	2	Oral presentation using video projector, interacting with students in the classroom.	
• Advanced methods of modelling, simulation and optimisation through IT&C solutions	4	Oral presentation using video projector, interacting with students in the classroom.	
• The role of IT&C in supporting decisions to locate service infrastructure for the efficient design and operation of a supply chain	2	Oral presentation using video projector, interacting with students in the classroom.	
• Location-allocation problems in transportation networks – models and solution algorithms	4	Oral presentation using video projector, interacting with students in the classroom.	
• Variants and extensions of location-allocation problems; combined logistics models: location-allocation-routing-storage	2	Oral presentation using video projector, interacting with students in the classroom.	
• New approaches, based on Computational Intelligence techniques in Business Transport: Evolutionary Computation - inspired by the evolution of biological species, Swarm Intelligence - inspired by the collective behavior of individuals and Fuzzy Logic	4	Oral presentation using video projector, interacting with students in the classroom.	
• Multiple criteria analysis and Computational Intelligence-based techniques in transportation and logistics	4	Oral presentation using video projector, interacting with students in the classroom.	

Bibliography

- Wang, Y and Pettit, S. „E-Logistics: Managing Digital Supply Chains for Competitive Advantage", Ed. Kogan Page Publishing, 2021.

- Sierpiński, G. and Macioszek, E. „Decision Support Methods in Modern Transportation Systems and Networks", Ed. Springer, 2021.
- Dinu, S. „Probleme de Amplasare - Alocare în Infrastructura Logistică: Modele Matematice și Soluții Informatice", Ed. Nautica, Constanta, 2016.
- Zak, J., Hadas, Y. and Rosssi, R. „Advanced Concepts, Methodologies and Technologies for Transportation and Logistics", Ed. Springer, 2018.
- Roeva, O. "Real-World Applications of Genetic Algorithms", Ed. InTech, 2012
OECD „Transport Logistics Shared Solutions to Common Challenges: Shared Solutions", Ed. OECD, 2002

Selective bibliography

- Sierpiński, G. and Macioszek, E. „Decision Support Methods in Modern Transportation Systems and Networks", Ed. Springer, 2021.
- Dinu, S. „Probleme de Amplasare - Alocare în Infrastructura Logistică: Modele Matematice și Soluții Informatice", Ed. Nautica, Constanta, 2016.
- Seminar notes available on the platform campus.cmu-edu.eu

Additional Notes

- Students may take photographs or make audio-video recordings in classrooms where teaching activities are conducted **only with the consent of the instructor** and **under the conditions established by the instructor**.
- Upon entering the classroom, students are kindly requested to **switch their mobile phones to silent mode** and **refrain from using them during classes**.
- All materials received by students, either directly or through postings on the platform *campus.cmu-edu.eu*, are subject to **national and international copyright legislation**. These materials may be used by students **solely for educational purposes**. Any other use or posting on publicly accessible websites without the consent of the copyright holder may be punished in accordance with **Law no. 8/1996 on copyright and related rights** and the **Berne Convention**.

10. The corroboration of contents of discipline with expectations epistemic community representatives, professional associations and representative employers in the corresponding program

- The content focuses on practical aspects of the use of IT techniques and tools in the transport and logistics services industry, in line with the latest discoveries in the field.

11. Examination

Type of activity	Examination Criteria	Methods of examination	Percentage of final grade
Course	knowledge of the notions and theoretical and practical aspects presented in the course	written exam	70%
Seminar	working themes and scenarios	ongoing assessment	30%
Laboratory			
Project			

Grading Requirements

Minimum score required: **50 points: grade 5**

- If a student participates in conferences (student, local, national, or international) or competitions (national or international) related to the subject of this course, they may receive additional points or equivalence for certain assignments, papers, and/or attendance, depending on the results obtained.
- During written examinations, students are not allowed to use mobile phones or any other electronic devices, except for simple scientific calculators.

Minimum performance standards

Obtaining a score of 50 points for written exam

Date of completion	Signature of lecture tenured	Signature of application tenured
24.09.2025	Assoc. Prof. Simona DINU PhD	Assoc. Prof. Simona DINU PhD

Date of approval in the department	Signature of Director of Department
26.09.2025	Lecturer Ana Cornelia OLTEANU PhD

Date of approval in the faculty council	Signature of Dean
29.09.2025	Associated Professor Nicoleta ACOMI EngD