Center for Interdisciplinary and Multidisciplinary Studies / / Modeling the supply chain

Course:	Modeling the supply chain			
Course ID	**Course status**	**Semester**	**ECTS credits**	**Lessons** (Lessons+Exercises+Laboratory)
13762	Optional	1	10	4+2+1
Programs				
Prerequisites	No prerequisites for course enrolment and attending			
Aims	The main goals of the subject are primarily aimed at acquiring academic knowledge in relation to modeling in Supply Chain Management (SCM) and Green Supply Chain Management (GSCM) with special emphasis on maritime transport technologies, port systems, maritime logistics and shipping, as well as their role and importance in modeling processes in SCM and GSCM.			
Learning outcomes	1. Application of the the optimization methodology for planning in SCM and GSCM; 2. Application of the methodology for site selection of distribution centers in SCM and GSCM; 3. Useing the experience of modeling logistics centers in SCM and GSCM; 4. Modelling of the network configuration and supply chain through adequate models; 5. Optimizarion of the transport chain in SCM and GSCM; 6. Solving of the examples from practice in relation to strategic and tactical planning in SCM and GSCM; 7. Using of the simulation models in SCM and GSCM ; 8. Modelling of the activities in SCM and GSCM; 9. Solving of the practical examples in Maritime Logistics and Ports as parts SCM and GSCM from the immediate environment; 10. Solving of the practical examples in Maritime Shipping as parts SCM and GSCM from the immediate environment; 11. Solving of the practical examples in SCM and GSCM from the immediate environment			
Lecturer / Teaching assistant	Prof. Branislav Dragovic, PhD			
Methodology	Lectures, practical exercises, learning, performing individual practical exercises, debates, consultations.			
Plan and program of work				
Preparing week	Preparation and registration of the semester			
I week lectures	Supply Chain Management (SCM), Integrated Planning, Models			
I week exercises	Supply Chain Management (SCM), Integrated Planning, Models			
II week lectures	Information Technology			
II week exercises	Information Technology			
III week lectures	Fundamentals of optimization models: Linear programming I			
III week exercises	Fundamentals of optimization models: Linear programming I			
IV week lectures	Fundamentals of optimization models: Linear programming II			
IV week exercises	Fundamentals of optimization models: Linear programming II			
V week lectures	Fundamentals of optimization models: Mixed-Integer Programming			
V week exercises	Fundamentals of optimization models: Mixed-Integer Programming			
VI week lectures	Overview of Descriptive Models			
VI week exercises	Overview of Descriptive Models			
VII week lectures	The First Compulsory Assignment			
VII week exercises	The First Compulsory Assignment			
VIII week lectures	Supply Chain Decision Databases			
VIII week exercises	Supply Chain Decision Databases			
IX week lectures	Operational Supply Chain Planning			
IX week exercises	Operational Supply Chain Planning			
X week lectures	Green Supply Chain Management (GSCM), Environmental Collaboration and Sustainability Performance			
X week exercises	Green Supply Chain Management (GSCM), Environmental Collaboration and Sustainability Performance			
XI week lectures	Green transportation and reverse logistics			

XI week exercises	Green transportation and reverse logistics
XII week lectures	The Role of Seaports in Green Supply Chain Management: Initiatives, Attitudes, and Perspectives in the South Adriatic Ports
XII week exercises	The Role of Seaports in Green Supply Chain Management: Initiatives, Attitudes, and Perspectives in the South Adriatic Ports
XIII week lectures	Sustainable Sea Port Systems within Green Transport Corridors
XIII week exercises	Sustainable Sea Port Systems within Green Transport Corridors
XIV week lectures	Role of Logistics and Transportation in Green Supply Chain Management
XIV week exercises	Role of Logistics and Transportation in Green Supply Chain Management
XV week lectures	The Second Compulsory Assignment
XV week exercises	The Second Compulsory Assignment
Student workload	Weekly 10 credits x 40/30 = 13hours + 20 minutes Structure: 3 hours of lectures 1 hours of exercise 0 hours of practical work 9 hours 20 minutes of individual work, including consultations In Semester Teaching and the Final Exam: 13h + 20 min. x 16 = 199h + 30 minutes Necessary preparation before Term starting (admin., enrolment, verification): 2 x (13h + 20 min) = 26h + 40min Total hours for the course: 10 x 30 = 300h Additional hours for preparing correction of final exam, including the taking of the exam: 0 do 73h and 50 minutes Structure of the students' duties: 199h + 20 min.(lectures) + 26h + 40min + 73h and 50 minutes(additional work)

Per week	**Per semester**
10 credits x 40/30=13 hours and 20 minuts 4 sat(a) theoretical classes 1 sat(a) practical classes 2 excercises **6 hour(s) i 20 minuts** of independent work, including consultations	Classes and final exam: **13 hour(s) i 20 minuts x 16 =213 hour(s) i 20 minuts** Necessary preparation before the beginning of the semester (administration, registration, certification): **13 hour(s) i 20 minuts x 2 =26 hour(s) i 40 minuts** Total workload for the subject: **10 x 30=300 hour(s)** Additional work for exam preparation in the preparing exam period, including taking the remedial exam from 0 to 30 hours (remaining time from the first two items to the total load for the item) **60 hour(s) i 0 minuts** Workload structure: **213 hour(s) i 20 minuts (cources), 26 hour(s) i 40 minuts (preparation), 60 hour(s) i 0 minuts (additional work)**
Student obligations	Students are required to attend classes (lectures and exercises) and to take Preliminary Exams and the Final Exam.
Consultations	After the lectures.
Literature	1. Shapiro, J.F., (2007), Modeling the supply chain, 2nd edition, Duxbury Applied Series. 2. Dragović, B., (2007), Logistics decision making, Korea Maritime University, Logistics System Engineering. 3. Dragović, B., Zrnic, Dj., Radmilovic, Z., (2006), Ports and containers terminals modeling, Faculty of Traffic and Transport Engineering of the University of Belgrade. 4. Dragović, B., Zrnic, N., Nam-Kyu Park, (2011), Container terminals performance evaluation, Faculty of Mechanical Engineering of the University of Belgrade. 5. Dragović, B., (2024), Maritime transport technologies and logistics, SaTCIP, VrnjackaBanja.
Examination methods	1. The First Compulsory Assignment, 0 to 15 points. 2. The Second Compulsory Assignment, 0 to 15 points. 3. Seminar paper, from 0 to 20 points. 4. Final exam, 0 to 50 points. Passing mark is obtained if the student collects at least 50 points.
Special remarks	-
Comment	-

Grade:	F	E	D	C	B	A
Number of points	less than 50 points	greater than or equal to 50 points and less than 60 points	greater than or equal to 60 points and less than 70 points	greater than or equal to 70 points and less than 80 points	greater than or equal to 80 points and less than 90 points	greater than or equal to 90 points