

LOGISTICS, SUPPLY CHAIN & MARITIME BUSINESS

35004 - OPTIMIZATION METHODS IN LOGISTICS

General information

- Academic year 2023/24
- Course: First
- Trimester: Third
- Number of credits: 3
- Teachers:
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Teaching languages

- Spanish

Els recursos de l'assignatura i els software poden estar en castellà o anglès.

Presentation of the subject

L'objectiu de l'assignatura és iniciar a l'estudiant en les tècniques de modelar i formular matemàticament els problemes de decisió (heurístiques i metaheurístiques) que sorgeixen en la logística i la gestió de la cadena de subministrament.

A més s'adquiriran coneixements sobre la resolució analítica (algorisme de simplex, dual, primal, estudi de sensibilitat, etc.) i gràfica (en el cas de dues variables) de problemes de programació lineal i dinàmica.

Competences/learning outcomes

Basic

- CB6 - Possess and understand knowledge that provides a basis or opportunity to be original in the development and / or application of ideas, often in a research context
- CB7 How to apply the knowledge acquired and the ability to solve problems in new or little-known environments within broader (or multidisciplinary) contexts related to the area of study.
- CB8 - That students be able to integrate knowledge and confront the complexity of formulating judgments based on information that, being incomplete or limited, includes reflections on the social and ethical responsibilities linked to the application of their knowledge the judgments

Specific

- CE1. Show autonomy with critical distance in issues or issues related to the maritime business, logistics and the supply chain and in the application of innovative ideas in these fields.
- CE2. Application of tools and methodologies that facilitate creative and innovative thinking in everyday situations linked in the supply chain environment, logistics, and maritime businesses.
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CE3. Plan the analysis in the business environments, local and global, in order to move ahead to the new market opportunities that can be transformed into commercial products

- CE5. Design and implement logistics systems, evaluating the different possible alternatives, technical and resource constraints and taking into account coordinated management and management throughout the supply chain.
- CE6. Evaluate the performance of the entire logistics system, taking into account the fulfillment / no of the planned quality, cost and service objectives to detect and prioritize areas of improvement.
- CE7. Manage (plan, program and control) the flow of materials and information (flow of the supply chain) through the direction and coordinated management of the areas of purchases, production and physical distribution of the company.

Transversal

- CT1. Show willingness to learn about new cultures, experience new methodologies and foster international exchange in the context of logistics, the supply chain and maritime businesses.
- CT2. Show entrepreneurial leadership and management skills that strengthen personal confidence and reduce risk aversion.
- CT3. Develop tasks by applying the acquired knowledge with flexibility and creativity and adapting them to new contexts and situations.

No data

Contents

L'assignatura es centrarà a resoldre problemes de logística formulats com a models de optimització determinista.

Programació lineal i problemes d'optimització discreta.

L'algoritme Simplex per a la programació lineal i cerca de ramificacions i enllaços per a problemes discrets.

Programació dinàmica i altres mètodes de solució.

Sustainable Development Goals

- 12 - Responsible consumption and production
- 04 - Quality education

Evaluation system

L'avaluació consta de dues parts:

- Examen final (50% amb nota mínima de 4 sobre 10)
- Activitats entregables individuals o per equips (50%)