

“GHEORGHE ASACHI” TECHNICAL UNIVERSITY OF IASI

Faculty of Industrial Design and Business Management

Department of Engineering and Management

Application for the position of **Professor, position no. 3** from the List of Positions for Academic Staff

Disciplines:

1. Quantitative techniques for managerial decision making.
2. Operational research.
3. Electrical production management.

APPLICATION TOPICS

for the position of **Professor**

1. Management of decision-making processes. Elements of decision-making process. Stages of decision-making process. Decisions in conditions of certainty/uncertainty/risk. Decision trees.
2. Decisions making regarding production mix optimization based on linear programming. Simplex algorithm. Dual simplex. Rare resources. Shadow price. Sensitivity analysis. Reoptimization. Multicriteria programming.
3. Inventory management strategies for business streamlining. Inventory costs. Administrative strategies for stock management.
4. Optimizing of resource utilization using the Critical Path Method. PERT (Program Evaluation Review Technique) analysis of the critical path. Decisions regarding the resources allocation/leveling/intensity determination.
5. Transport and assignment problems. Theoretical aspects. Algorithm for optimizing transport/assignment problems.
6. Graphs and networks. Oriented/non-oriented graph. Optimal/Critical path determination. Hamiltonian Path. Maximum Flow Algorithm.
7. Queuing theory. Theoretical aspects. System features. Evaluation of system performance. Analysis models.
8. Production processes and structures in the electrical enterprise. Structural organization of processes in electrical engineering. Production capacity and the degree of utilization.
9. Methods of design and improvement of electrical products - value analysis and engineering.
10. Production resources management. Elements of electrical production planning. Serial and mass production scheduling systems.

References:

1. Oakshott, L., (2020), *Essential Quantitative Methods: For Business, Management and Finance* 7th edition, Red Globe Press.
2. Anderson, D. R., et al., (2016), *eTextbook: Quantitative Methods for Business*, 13th Edition
3. Wisniewski, M., Shafti, F., (2019), *Quantitative Methods for Decision Makers* - 7th edition, Pearson Publisher.
4. Donald, W., (2011) *Quantitative Methods for business decisions 5th edition*, Pearson Publisher.
5. Reid, D., Sanders, N.R., (2020) *Operations Management: An Integrated Approach* – 7th edition, Wiley (WileyPLUS Products).
6. Neagu, C., (2015), *Tratat de organizare industrială*, Editura Matrixrom, București.
7. Condurache, Gh., (2008), *Managementul Producției Electrice*, Ed. Performantica, Iași.
8. Stevenson, W.J., (2020) *Operations Management* 14th Edition, Ed. McGraw-Hill/Irvin.
9. Rusu, E., (2004) *Metode și tehnici de decizie în management*, Casa de editura Venus.
10. Zaharia, M., Despa R., (2008) *Cercetări operaționale*, Ed. Universitară.
11. Militaru, Gh., (2008) *Managementul producției și al operațiunilor*, Ed. Libris.
12. Wisniewski, M., Klein, J, H., (2001) *Linear Programming and Critical Path Analysis*, Ed Palgrave.
13. Chase, R., et al. (2007) *Operations Management for Competitive Advantage*, 11th ed McGraw-Hill.
14. Malakooti. B., (2013) *Operations and Production Systems with Multiple Objectives*, John Wiley & Sons.
15. Rusu E., (2001) *Decizii optime in management prin metode ale cercetarii operationale*, Editura Economica, Bucuresti.
16. Purcărea, A. (2014), *Management și inginerie industrială. Modele matematice*, Editura Niculescu.
17. Nicolescu, O., Băgu, C., (2012), *Managementul producției*, Editura Pro Universitaria, București.
18. Neagu, C., et al. (2006) *Ingineria si managementul productiei*, Ed. Didactică și Pedagogică București.
19. Pîslaru, M., (2015) *Cercetare Operațională*, Ed. Performantica, Iași.
20. Bouyssou, D., et al., (2006) *Evaluation and decision models with multiple criteria*, Springer Science.
21. Pîslaru M., (2015) *Managementul Producției Electrice - Note de curs*, Ed. Performantica,

Dean,

Associate Prof. Mariana URSAACHE, Ph.D., Eng.

Formular TUIASI.POB.08-F1



Departament director,

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