



CURSO Pós-graduação em Engenharia Química		DEPARTAMENTO Engenharia Química		CENTRO Tecnologia
DISCIPLINA PROCESS OPTIMIZATION		CÓDIGO DEQ4128	OBRIGATÓRIA ☐	ELETIVA ☒
CARGA HORÁRIA 45 h/a	CRÉDITOS 03	VIGÊNCIA A partir de 2020		

EMENTA

Objective functions. Constrained and Unconstrained optimization. Linear Programming. Nonlinear Programming. Mixed Integer Linear Programming. Mixed Integer Nonlinear Programming

PROGRAMA:

1. Optimization problems formulation. Optimization models.
2. Objective functions. Unconstrained optimization. Nonlinear optimization numerical methods. Constrained optimization.
3. Linear Programming. Simplex method.
4. Nonlinear programming. Quadratic programming. Decomposition techniques.
5. Mixed integer mathematical programming. Branch and bound method.
6. Non deterministic approaches.

REFERENCES:

Biegler, L. T.; Grossmann, I. E. e Westerberg, A. W. Systematic Methods of Chemical Process Design, 1977.

Edgar, T. F. e Himmelblau. Optimization of Chemical Processes. McGraw-Hill, 1989.

Caballero, J. A. Simulación y Optimización de los Procesos Químicos. Universidad de Alicante, 2019.

Floudas, C. Nonlinear and mixed integer optimization: fundamentals and applications. Topics in Chemical Engineering, Oxford University Press, 1995