



CURSO Pós-graduação em Engenharia Química		DEPARTAMENTO Engenharia Química		CENTRO Tecnologia	
DISCIPLINA ENERGY INTEGRATION			CÓDIGO DEQ4127	OBRIGATÓRIA ☐	ELETIVA ☒
CARGA HORÁRIA 45 h/a		CRÉDITOS 03	VIGÊNCIA A partir de 2020		

EMENTA

Process synthesis, Heat exchanger networks and Process design.

PROGRAMA:

1. Process synthesis. Onion diagram. Superstructures.
2. Heat exchanger networks.
3. Pinch analysis: composite curves, problem table algorithm, supertargeting, heat exchangers allocation, network evolution.
4. Mathematical programming methods: transshipment model, Floudas superstructure, Yee and Grossmann superstructure.
5. Meta-heuristic methods: Particle Swarm Optimization, Simulated Annealing.

REFERENCES:

Ravagnani, M. A. S. S. and Caballero, J. A. Redes de cambiadores de calor, Editora de la Universidad de Alicante, 2012.

Biegler, L. T., Grossmann, I. E. and Weterberg, A. W. Systematic Methods of Chemical Process Design. Prentice Hall International Series. 1997.

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.