CURSO **Pós-graduação em Engenharia Química**		DEPARTAMENTO **Engenharia Química**		CENTRO **Tecnologia**
DISCIPLINA **PROCESS MODELING AND SIMULATION**		CÓDIGO **DEQ4129**	OBRIGATÓRIA ☐	ELETIVA ☒
CARGA HORÁRIA **45 h/a**	CRÉDITOS **03**	VIGÊNCIA **A partir de 2020**		

EMENTA

Principals of modeling. Process simulation. Process flowsheet. Sequential modular simulation. Equations-oriented simulation. Physical properties in Process simulators.

PROGRAMA:

1. Principals of modeling: Phenomenological models. Empiric models. Hybrid models. Lumped and distributed parameters models. Degrees of freedom.
2. Sequential modular simulation: Large-scale systems decomposition. Partitioning algorithms. Tearing algorithms. Modular simultaneous decomposition.
3. Equations-oriented simulation: Large systems decomposition. Matrices decomposition. Triangular matrices.
4. Process simulators: Commercial and academic simulators. Sequential modular and equations-oriented simulators. Physical properties in process simulators.
5. Stead-state and dynamic simulation.

REFERENCES:

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

Luyben, W. Process Modeling, Simulation and Control for Chemical Engineers, 2nd Edition, McGraw Hill.

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