

# Course Learning Objectives - CBE 490

## Process Design and Economic Analysis (3)

At the conclusion of this course, the student should be able to:

1. Develop a set of design objectives, including those relating to pollution prevention, and identify a set of design constraints so that process synthesis may proceed.
2. Synthesize a broad set of feasible process alternatives.
3. Screen and select appropriate design alternatives for further study.
4. Collect and evaluate fundamental data required for development and comparison of appropriate design alternatives.
5. Synthesize flowsheets for selected designs, including material and energy requirements, and identification of waste streams.
6. Utilize appropriate economic performance measures for analysis of each design alternative, including estimates of capital investment, annualized operating cost, and/or appropriate measures of profitability.
7. Report, in written and oral presentation, the procedures and results of a systematic design study.
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8. Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
9. Communicate effectively with a range of audiences.