ENGR 3324: Project Cost Analysis

3 Credit Hours

Prerequisite: MATH 1190, EDG 2160, and Engineering Standing

A study of the project cost measurement and analysis techniques unique to the engineering profession. Cost analysis procedures and their relationship with cost estimation methodologies are examined. Emphasis is placed on techniques for economy studies of multiple alternatives, uncertainties in forecasts, increment costs, taxes, and retirement and replacement of highways, transportation systems, bridges and publics works facilities. Current economic issues are also discussed.

ENGR 3325: Engineering Economic Analysis

3 Credit Hours

Prerequisite: (MATH 1190 or (MATH 1179 and MATH 1189))and Engineering Standing

Students learn the time value of money and the basic tools used in engineering economic decision making. The tools include engineering factor notation, algebraic formulas, and Excel functionality. The time value effect is studied as equivalences for present worth, annual worth, or future worth evaluations. Useful algorithms are presented for making sound economic investment decisions involving replacement theory, risk analysis, depreciation, tax incentives, rate of return, cost benefit ratio, return on investment, and economic service life.

ENGR 3343: Fluid Mechanics

3 Credit Hours

Prerequisite: ENGR 2214 and Engineering Standing

This course introduces the fundamentals of fluid statics and dynamics including hydrostatic forces on submerged plates, continuity of fluid flow and fluid flow principles. The applications of turbulent and laminar flow in conduits are emphasized. The system approach is practiced in analyzing the applications of flow measuring devices, pipings, pumps and turbines.

ENGR 3345: Fluid Mechanics Laboratory

1 Credit Hours

Prerequisite: ENGR 3343 (may be taken concurrently) and Engineering Standing

The laboratory reinforces the principles of fluid mechanics, studied in ENGR 3343, as they apply to hydraulic and pneumatic power, and fluid flow. Developing experimental data into effective laboratory reports is emphasized.