

CIVIL ENGINEERING LAB (CIVL)

CIVL 310 ENGINEERING SURVEYING LAB (1 Hour)

Prerequisite: PHY 211; Co-requisite: CIV 310.

Field experience to measure surveying parameters including distances, angles, and elevations. Field notes, surveying equipment; critically analyze and interpret data, report writing.

CIVL 330 FLUID MECHANICS LAB (1 Hour)

Co-requisite: CIV 330. Laboratory experience to measure fluid properties and apply principles for application in engineering design. The experiments will include pressure and velocity measurement, application of mass, energy, and momentum principles, energy losses, forces on immersed bodies, and flow measurement devices; critically analyze and interpret data, report writing.

CIVL 340 ENVIRONMENTAL ENGINEERING LAB (1 Hour)

Prerequisite: CHEM 141; Co-requisites: CIV 330, 340, CIVL 330.

Experiments for the analysis of water, wastewater and certain solid wastes. Selected experiments may include determinations of water's or wastewater's pH, alkalinity, turbidity, hardness, and electric conductivity, solids, nitrogen species, dissolved oxygen, biochemical oxygen demand (BOD), chemical oxygen demand (COD), total organic carbon, and chlorinated compounds. Also included will be contaminant leaching test of some solid or hazardous wastes and absorption of contaminants by solid media. Critical analysis of experimental and interpretation of data and scientific presentation (reporting) of results are emphasized.

CIVL 380 GEOTECHNICAL ENGINEERING LAB (1 Hour)

Co-requisite: CIV 380. Laboratory experiments to be performed by students to obtain soil parameters for designed problems. Engineering classification of soils, grain size distribution, Atterberg limits, specific gravity, unconfined compression, compaction, in-situ field tests, consolidation, and shear strength determination, application to design problems, critically analyze and interpret data, report writing.

CIVL 421 STRUCTURES & MATERIALS LAB (1 Hour)