2L. Plane Surveying: Advanced Laboratory (1)

Field practice in land surveying, astronomy, triangulation, and route layout. (3 lab hours; field trips)

11. Manufacturing Processes (2)

General purpose and production machine tools, metal cutting and welding, hot and cold forming, grinding, gages, jigs, fixtures, tooling.

11L. Manufacturing Processes Laboratory (1)

Operation of machine tools, welding equipment, hot and cold forming equipment, casting equipment; practice in the use of gages, jigs, and fixtures. (3 lab hours; field trips)

26. Engineering Graphics (4)

Prerequisite: Math 75 (or concurrently). Principles and applications of orthographic projection and graphical mathematics to the solution of engineering problems. (2 lecture, 2 3-hour labs)

30. Engineering Mechanics: Statics (2)

Prerequisite: Physics 4A; Math 77 (or concurrently). Statics, analysis of force systems, equilibrium problems, graphic and algebraic methods of problem solution.

32. Engineering Materials (2)

Prerequisite: Engr 30; Chem 8 (or concurrently). Fundamental nature and properties of engineering materials; structure of matter; mechanical, electrical, magnetic, and thermal properties.

70. Computer Programming (1)

Prerequisite: Math 75, 76. Introduction to digital computer programming. (1 2-hour lecture-lab)

101. Route Surveying (2)

Prerequisite: Engr 2, 2L. Computation and field work covering surveys for highway, irrigation, construction and other kinds of engineering projects. (1 lecture, 3 lab hours; field trips)

102. Geodetic Surveying (2)

Prerequisite: Engr 2, 2L; Math 76. Triangulation; adjustment of geodetic figures; base line measurement, map projection; precise leveling. (1 lecture, 3 lab hours; field trips)

103. Photogrammetry (2)

Prerequisite: Math 30, Engr 1, or permission of instructor. Terrestrial and aerial photography applied to surveying and mapping; stereoscopy; application of aerial surveying to specific engineering problems. (1 lecture, 3 lab hours; field trips)

104. Boundary Control and Legal Principles (2)

Prerequisite: Engr 2. Legal principles that control the boundary location of real property.

110. Statistical Analysis and Control (3)

Prerequisite: Math 76. Fundamentals of probability and statistics; general theory and practice of statistical quality control applied to industrial situations; sampling plans.

111. Methods Analysis (2)

Prerequisite: Senior standing or permission of instructor. General approach to a design problem; application of the design approach to methods engineering; prin-