MET 3132: Engineering Materials

3 Credit Hours

Prerequisite: CHEM 1211

Concurrent: MET 3124 or ENGR 3131

A study of metals, ceramics, polymers, and composites as related to design. Areas include corrosion, atomic structure, mechanical properties, failure theories, fatigue, creep, cold working, heat treating, alloying, and non-destructive testing. The lab work includes tensile testing, heat treating, impact testing, hardness testing, and corrosion.

MET 3132L: Engineering Materials Lab

1 Credit Hours

Concurrent: MET 3132

In this course/laboratory students will gain practical experience in testing of materials including metals, polymers, and composites. Tests include tensile testing, heat treating, impact testing, hardness testing, and corrosion.

MET 3331: Tool Design

3 Credit Hours

Prerequisite: MET 2800 and (ENGR 3131 or MET 3124)

In this courses jigs and fixtures for production machining processes are covered. Specific subjects include methods of gauging work pieces, ease and simplicity of operation, assembly methods, capital evaluation, techniques for locating and holding work pieces, time studies, tool steels, bending allowances, and reverse engineering techniques. The course is design project oriented. Projects include calculations of tooling forces and costs as well as complete production drawings of the tool design.

MET 3332: Rapid Design and Manufacture

3 Credit Hours

Prerequisite: MET Majors and EDG 1212, or department approval

This course is focused on bringing products to market as quickly as possible primarily through the use of 3D scanning and additive manufacturing technologies. Product Design, reverse engineering, and rapid tooling are topics covered and applied in this course.