

Machine Tool Metalworking**IA 74. Basic Machine Tool Metalworking (3) (Former IA 10A-B)**

Basic methods of machining metals, including drilling, turning and boring, milling, grinding, and shaping; measuring tools, precision measuring instruments, and layout; steel and its heat treatment. (lecture-lab)

IA 174. Advanced Machine Tool Metalworking (3) (Former IA 112)

Prerequisite: IA 74. Advanced machining and tooling, special machine tools, and precision measuring instruments; laboratory experiences in use of ferrous and nonferrous metals, cast iron and semisteel castings. (lecture-lab)

IA 175. Machine Tool Technical Problems (3) (Former IA 115)

Prerequisite: IA 74. Technical problems in design, layout, fabrication, machineability of materials, tooling, gearing principles, speeds and feeds, coolants related to modern manufacturing processes; installation, preventive maintenance, adjustment, repair of machine tools; specifications of materials and equipment. (lecture-lab)

IA 176. Advanced Machine Tool Problems (3)

Prerequisite: IA 174. Advanced technical work in metals area; introduction to tool and die work; jig and fixture principles and practices; heat treatment; experimental work and technical reports.

Metal Craft**IA 177. Metal Craft (2) (Former IA 117A)**

Technological, scientific, historical, cultural, and economic aspects of the nonferrous metals and the industries to which they relate; individually designed and hand crafted articles produced through coordinated laboratory experiences. (lecture-lab)

IA 179. Jewelry (2; max total 4) (Former IA 107)

Designing and executing articles of jewelry using a wide range of traditional and contemporary materials and techniques; historical, cultural, economic, scientific and technological aspects of jewelry coordinated with laboratory experiences. (lecture-lab)

WOODWORKING AREA**IA 80. Basic Woodworking (3) (Former IA 1)**

Basic woodworking processes and materials; use and care of hand tools and portable electric tools; design, construction, and finishing of simple wood products; wood turning; basic operations on light woodworking machinery; basic information units in wood technology.

IA 82. Wood Machining (3) (Former IA 2)

Prerequisite: IA 80 or permission of instructor. Development of proficiency in the operation and maintenance of modern woodworking machinery and spray finishing equipment; safety education, cutting principles and techniques, machine design and capabilities.

IA 181. Wood Frame Building Construction (3) (Former IA 100)

Principles of wood frame construction including foundations, framing, exterior finish and related areas of layout, estimating and ordering materials; conventional and modular component systems.

IA 182. Advanced Wood Machining (3) (Former IA 101)

Prerequisite: IA 82. Construction of furniture, cabinet work and millwork; design, construction details, production methods; analysis of cutting processes.