

### Sheet Metalworking

#### **IA 73. Basic Sheet Metalworking (3) (Former IA 18)**

Sheet metal pattern drafting and layout applicable to parallel and radial development; bending, forming, and assembling of industrial items relative to light gauge metals.

#### **IA 173. Advanced Sheet Metalworking (3) (Former IA 118)**

Prerequisite: IA 73 or equivalent. Sheet metal pattern drafting and layout applicable to triangulation using light gauge metals; individual problems in planning, using, and maintaining hand and machine tools.

### 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 178. Advanced Metal Craft (2) (Former IA 117B)**

Study of nonferrous metal industries; emphasis on spinning and precision casting; design and execution of projects through coordinated laboratory experiences. (lecture-lab)

#### **IA 179. Jewelry (2) (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; faceplate and spindle turning; basic operations on light woodworking machinery; basic information units in wood technology.