

**IA 152. Fundamentals of Electronics (3) (Former IA 111B)**

Prerequisite: IA 52. Basic electronic components and circuits including inductors, capacitors, alternating current circuits; resonance and filters; vacuum tubes and transistors; power supplies; measuring devices; oscillators; amplifiers. (lecture-lab)

**IA 153. Advanced Electronics (3) (Former IA 111C)**

Prerequisite: IA 152. Electronic systems and applications including basic transmitters, amplitude and frequency modulation transmitters and receivers; transistor applications; antennas; television. (lecture-lab; field trips)

**IA 154. Industrial Electronics (3)**

Prerequisite: IA 153. Industrial electronics systems analysis; applications of electronic circuits and devices to industrial process and machine control. (lecture-lab; field trips)

**IA 156. Fundamentals of Electrical Machines (3) (Former IA 111A)**

Prerequisite: IA 52. Power generation; energy conversion equipment; alternating and direct current motors and generators. (lecture-lab; field trips)

**IA 158. Fundamentals of Electrical Power Distribution and Wiring (3) (Former IA 111D)**

Prerequisite: IA 52. Electrical power distribution equipment and systems; industrial and residential wiring circuits, devices and systems; local and national electrical codes. (lecture-lab; field trips)

**GRAPHIC ARTS AREA****IA 60. Basic Graphic Arts (3) (Former IA 26)**

Introduction to the graphic arts; hand composition, paper making, stereotype, rubber-stamp, thermography, marbling; experiences in relief printing methods; overview of entire printing industry. (lecture-demonstration; student projects, field trips)

**IA 160. Advanced Graphic Arts (3) (Former IA 127)**

Prerequisite: IA 60 or permission of instructor. Typographic layout and design; problems of book manufacture; principles of advertising layouts; hand, machine, and photographic typesetting methods; experience in running automatic printing press and typesetting machine. Field trips.

**IA 162. Graphic Arts Crafts (2) (Former IA 128)**

Various processes and media used in the graphic arts industry; creative and recreational aspect for the student; silk screen, linoleum block, flexography, intaglio, stereotype, papermaking, thermography, marbling, student projects. Field trips.

**IA 164. Bookbinding (2) (Former IA 142)**

Historical development of the book and its influence on our society; preparation for publication, methods of reproduction and materials used; projects in binding and rebinding; yearbook and textbook problems. Field trips.

**IA 166. Graphic Reproduction Techniques (3) (Former IA 145)**

Prerequisite: upper division student. For persons interested in the field of buying, selling or producing printed material. Processes of reproduction; types of publications; media, materials and equipment; technical problems in layout; legal problems; yearbook and in-plant publication reproduction. Field trips.