

# ENGINEERING GRAPHICS (EG)

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**EG 225****Engineering Graphics for Non-Engineers**

Designed for students in business, liberal arts and non-technical programs. Basic drafting techniques and applications, lettering, geometric constructions, charts and graphs, technical sketching, multiview projection, pictorial drawings, dimensioning, blueprint reading and working drawings. Introduction to computer graphics. Credit for this course is not applicable to an engineering degree.

**Lecture: 2 Lab: 1 Credits: 3**

**EG 305****Advanced Engineering Graphics and Design**

Advanced study of auxiliary views and sectioning, gears and cams, threads and fasteners, working drawings, assembly drawings, electronic drafting, ANSI drafting standards, and computer-aided drawing and design. Engineering design project.

**Prerequisite(s):** CAE 101 or MMAE 232

**Lecture: 2 Lab: 1 Credits: 3**

**EG 306****Engineering Descriptive Geometry**

Graphic solutions of problems involving point, line, and plane relationships by auxiliary views and revolutions. Developments and intersections of surfaces. Parallelism and perpendicularity, vectors, mining and civil engineering applications. Shades and shadows, conics, map projection and spherical triangles. Emphasis on applications which promote visualization and introduce new engineering experiences. Applications of computers to problem solving.

**Prerequisite(s):** CAE 101 or MMAE 232

**Lecture: 2 Lab: 2 Credits: 3**

**EG 325****Advanced Engineering Graphics for Non-Engineers**

Threads and fasteners, sectioning and auxiliary views, limit dimensioning, detail and assembly drawings, data representation, principles of descriptive geometry, manufacturing processes and computer graphics/CAD. Credit for this course is not applicable to an engineering degree.

**Prerequisite(s):** EG 225

**Lecture: 2 Lab: 1 Credits: 3**

**EG 329****Graphic Representation for Non-Engineers**

Basic techniques of graphics applied to communications and report writing. Use of computer graphics to generate charts and graphs including line charts, two- and three-dimensional bar charts, and pie charts. Integration of graphical presentations into technical and business reports. Credit for this course is not applicable to an engineering degree.

**Prerequisite(s):** EG 225

**Lecture: 3 Lab: 0 Credits: 3**

**EG 405****Mechanical Design Graphics**

Basic concepts of mechanical design and analysis. Advanced design layouts, details, assemblies, tolerance systems, surface finish control, materials, processes, ANSI drafting standards, engineering design processes, systems and procedures, application of computers to design, and CAD/CAM. Requires junior standing.

**Prerequisite(s):** EG 305

**Lecture: 2 Lab: 2 Credits: 3**

**EG 406****Technical and Pictorial Illustration**

Theory and construction of parallel and perspective pictorial projections, axonometric and oblique projections, parallel and angular perspective. Exploded pictorial assemblies. Basic rendering techniques used in technical illustration. Introduction to computer-generated pictorials. Requires junior standing.

**Prerequisite(s):** CAE 101 or MMAE 232

**Lecture: 2 Lab: 2 Credits: 3**

**EG 409****Computer-Generated Pictorial Projections**

Study of computer-generated representations of three-dimensional objects. Projections include multiview, perspective, axonometric (isometric, dimetric, and trimetric), and oblique.

**Prerequisite(s):** EG 406

**Lecture: 2 Lab: 2 Credits: 3**

**EG 419****Computer Graphics in Engineering**

Techniques of PC-based (AutoCAD) computer-aided drawing and design. Study of computer graphic hardware and software systems through demonstrations and use. Both 2D and 3D representation of components and assemblies from various engineering disciplines. Requires junior standing.

**Prerequisite(s):** CAE 101 or MMAE 232

**Lecture: 2 Lab: 2 Credits: 3**

**EG 425****Computer Graphics for Non-Engineers**

Principles and applications of computer graphics in business and nontechnical fields. Study of computer graphics hardware and software systems. Use of computer in producing charts, graphs, and technical drawings. Use of PC-CAD in problem solving and design. Credit for this course is not applicable to an engineering degree.

Requires junior standing.

**Prerequisite(s):** EG 325

**Lecture: 2 Lab: 1 Credits: 3**

**EG 429**

**Computer Graphics for Desktop Publishing**

Integration of computer graphic-generated images into technical and business reports produced with popular desktop publishing software. Emphasis on creation and selection of graphical presentations for optimum readability. Scanning and retouching techniques for two- and three-dimensional presentations. Introduction to multi-media and slide presentations. Credit for this course is not applicable to an engineering degree. Junior standing required.

**Prerequisite(s):** EG 329

**Lecture: 2 Lab: 2 Credits: 3**

**EG 430**

**Introduction to Building Information Modeling**

Fundamentals and practical use of information technologies in design; basic concepts of building information modeling (BIM); review of software and technology available for BIM; practical use of BIM in design for creating a site, viewing a model, starting a project, working in the AutoDesk "Revit" Environment, adding basic building elements to a project, conceptual energy analysis, designing a preliminary layout, and presenting a project.

**Lecture: 3 Lab: 0 Credits: 3**

**EG 497**

**Special Problems**

Special problems. Requires junior standing.

**Credit: Variable**