

## Unit 1 – Lesson 3

# Engineering Drawings

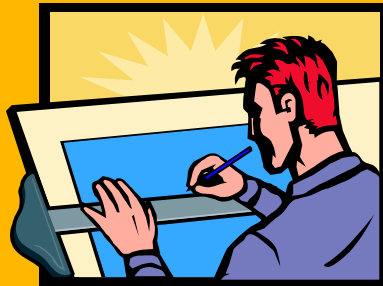


referenced from: [http://en.wikipedia.org/wiki/Engineering\\_drawing](http://en.wikipedia.org/wiki/Engineering_drawing)

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# What is an Engineering Drawing?

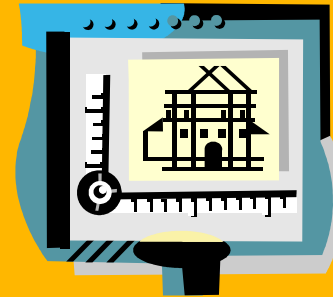
- an **engineering drawing** is a form of graphic communication
- this type of drawing is used in the transforming of an idea into physical form
- a person who creates an **engineering drawing** is known as a drafter



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# What is the Purpose of an Engineering Drawing?

- the **purpose** of an **engineering drawing** is to accurately capture all the geometric features of a product or a component
- the end **goal** of an **engineering drawing** is to convey all the required information that will allow a manufacturer to produce that component



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# So What is a Blueprint then?

- **engineering drawings** are often referred to as "**blueprints**" or "**bluelines**"
- this name arose out of the fact that **engineering drawings** were formerly made using a chemical-printing process that yielded graphics on **blue-colored paper** or, alternatively, of **blue-lines** on white paper



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# How are they created now?

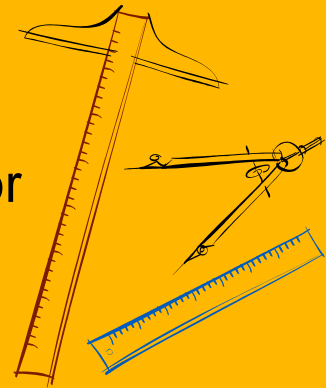
- **engineering drawings** can now produced using
- **drawings** are extracted from **three dimensional** computer models and can be printed as **two dimensional** drawings on various media



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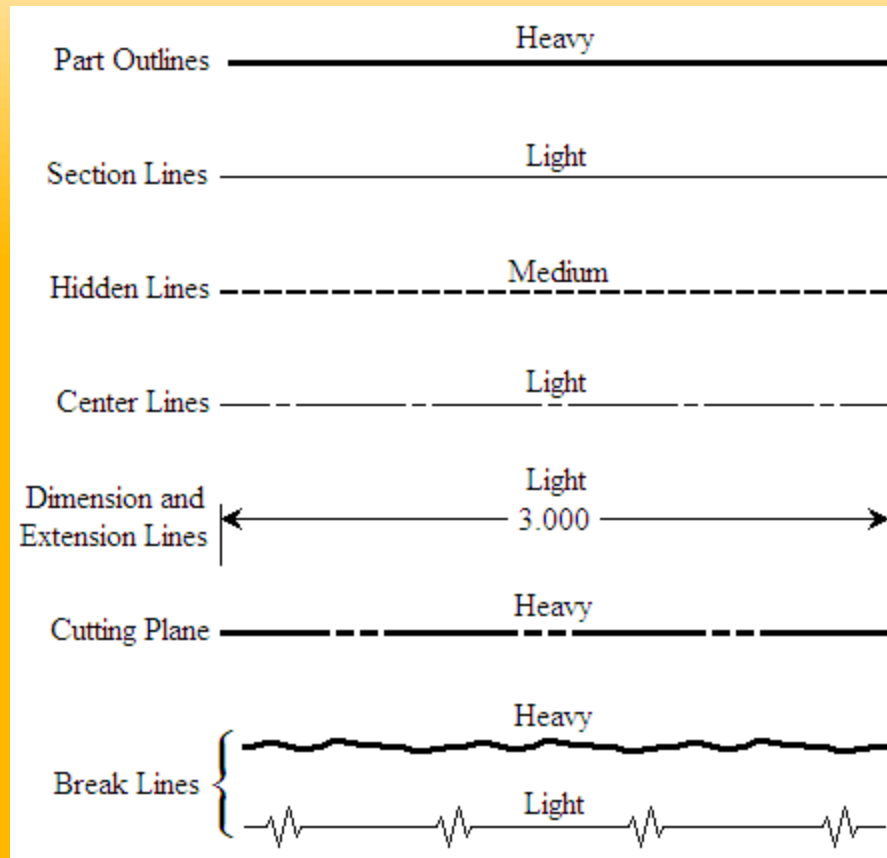
# Common features of Engineering Drawings

- **Geometry** – the shape of the object; represented as views; how the object will look when it is viewed from various standard directions, such as front, top, side, etc.
- **Dimensions** – the size of the object is captured in accepted units.
- **Tolerances** – the allowable variations for each dimension.
- **Material** – represents what the item is made of.
- **Finish** – specifies the surface quality of the item, functional or cosmetic



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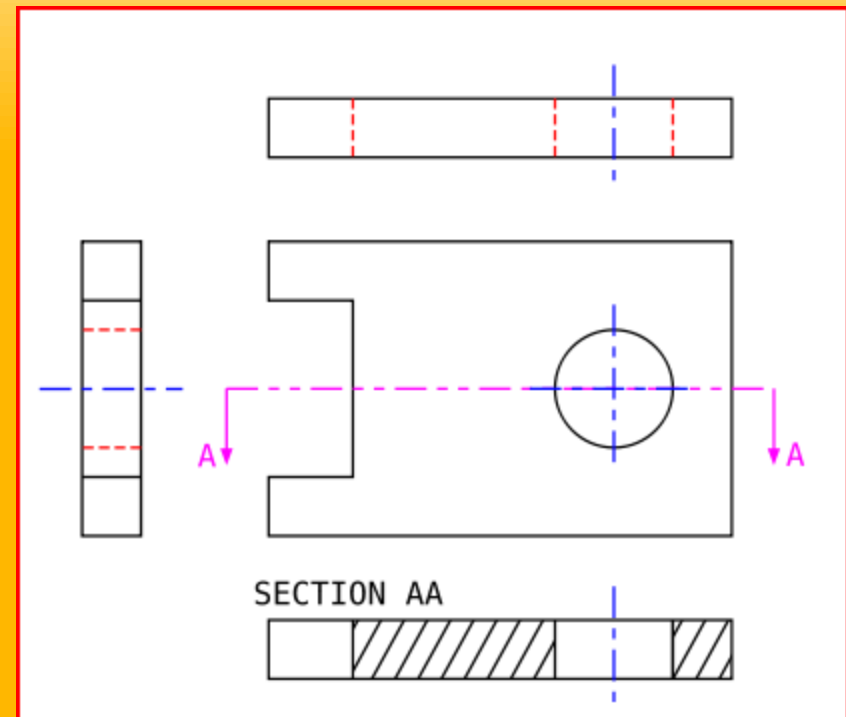
# Line styles and types



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# Example of an Engineering Drawing

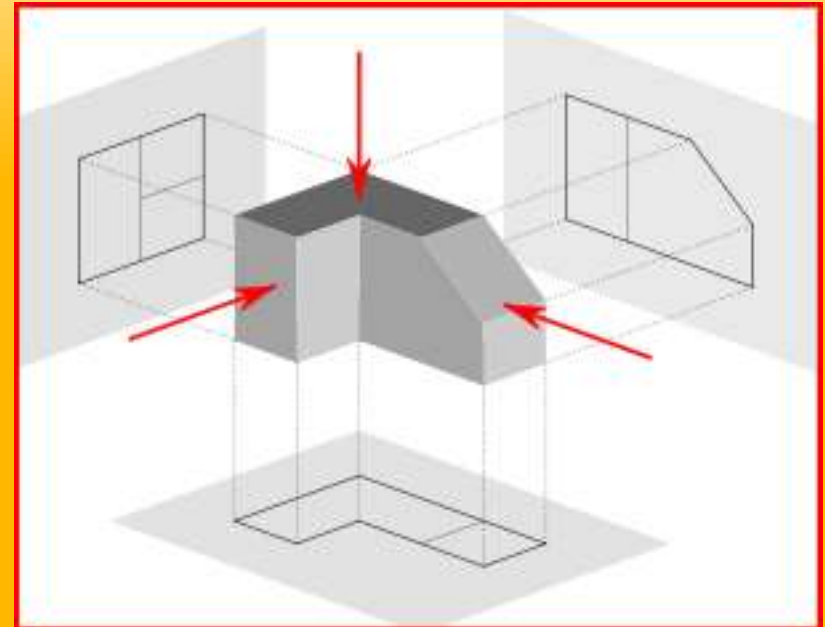
- the different **line types** are colored for clarity
- **Black** = object line and hatching
- **Red** = hidden line
- **Blue** = center line of piece or opening
- **Magenta** = phantom line or cutting plane



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# Orthographic Projection

- in most cases, a **single view** is not sufficient to show all necessary features, and **several views** are used
- "**orthographic**" comes from the Greek word for "**straight writing**"
- this projection shows the object as it looks from the **front, right, and top** and are typically positioned relative to each other



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# Lesson 3 Task

- Open up Internet Explorer
  1. **First** browse to our class webpage, from the main menu:
    - Courses->Semester 1->TDJ3M
    - Then follow the [Technical Drawing 1](#) link in the Tutorials column
    - Read the Wikipedia article describing Engineering drawings
  2. **Next** follow the [Technical Drawing 2](#) link in the Tutorials column
    - **read** and **take notes** on the above web page discussing **Technical Drawings** (same thing as Engineering Drawings) by filling out the handouts provided (**this is for hand in!**)