



# TDJ3M – Quiz # 1- Review

## Safety & Ergonomics

### Comfortable Computing

#### • Ergonomics

- The science that seeks to adapt work or working conditions to suit worker
- Repetitive movements and sitting at a workstation for extended periods of time can result in injuries in the form of :
  - Pain, tingling, numbness of the hands, headaches, neck pain
  - Soreness in legs, arms and back
  - Eyestrain, carpal tunnel syndrome
- These are all considered to be **Repetitive Strain** injuries

#### The Chair

- Backrest of chair should have a snug fit against your back
- You should be level with the monitor when seated upright in your chair

#### The Display

- The recommended viewing distance is to have your face about one arm lengths away from the monitor.
- If glare is a problem, position the screen at right angles to the light source
- Do not face a window
- Keep the screen clean
- Adjust the brightness and contrast controls
- Reflections can be eliminated by tilting the screen

#### The Keyboard

- With computer keyboards, all you need is a light touch while typing
- Typing too hard is bad for your joints and is also bad for the keyboard
- Your wrists should be as straight as possible and your arms should be parallel to the floor

#### Breaks

- Break up your computer tasks by getting up every once in a while to stretch or walk around
- A good rule of thumb is to only be in front of the computer for 50 minutes of every hour

#### Computer Lab Safety

- Make sure that all wiring and cables do not obstruct areas where people will be walking
- Be very careful that you don't get an electric shock when plugging and unplugging cables
- Food and beverages can damage the equipment in the lab therefore no food or beverages around the computers
- No horseplay in the computer lab

### The Technological Design Process

1. **Define Problem or Challenge** - The Design Brief
2. **Conduct Research** - Developing a Framework
3. **Generate Ideas** - Concepts for Potential Solutions
4. **Choosing the Best Solution** - Evaluating
5. **Build a Prototype or Model** - Implementing a Plan
6. **Test and Evaluate Solution** - Does it work?
7. **Reflect and Report** - Reflecting on the Process and the Product

### Engineering Drawings

#### What is an Engineering Drawing?

- an engineering drawing is a form of graphic communication
- a person who creates an engineering drawing is known as a drafter

#### What is the Purpose of an Engineering Drawing?

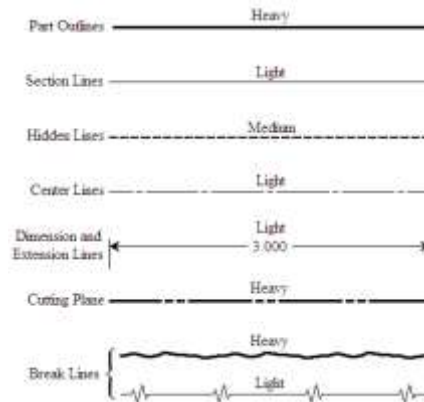
- the purpose of an engineering drawing is to accurately capture all the geometric features of a product or a component
- the end goal of an engineering drawing is to convey all the required information that will allow a manufacturer to produce that component

#### So What is a Blueprint then?

- engineering drawings are often referred to as "blueprints" or "bluelines"

#### 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



#### 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"