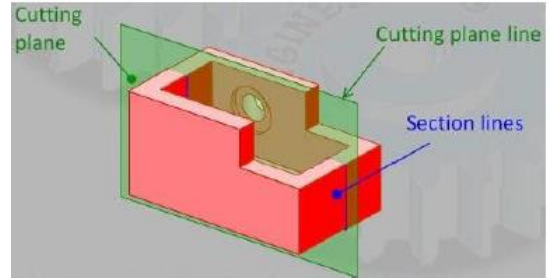


**SANGAM SKM COLLEGE - NADI**  
**LESSON NOTES – WEEK 1**  
**YEAR 12**  
**TECHNICAL DRAWING**

<b>Strand</b>	Applied Drawing
<b>Sub-Strand</b>	Engineering Drawing
<b>Learning Outcome</b>	Identify the different types of engineering components. Discuss the different methods of sectioning.

**Cutting Plane**

Cutting plane is a plane that imaginarily cuts the object to reveal the internal features.



**Section Lines and Symbols**

The section lines are different for each of the material's type.

For practice purpose, the cast iron symbol is used most often for any materials.



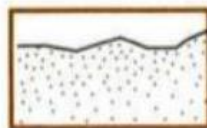
Cast Iron



Steel



Concrete



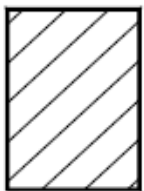
Sand



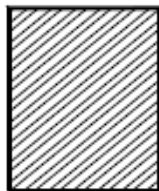
Wood

**Section Lines Practice**

- The spaces between the lines may vary from 1.5 mm for smaller sections to 3 mm for larger sections.
- The diagonal lines on the section drawing are used to indicate the area that has been theoretically cut.
- These Lines are called cross-hatching.
- The lines are thin and are usually drawn at a 45-degree angle to the major outline of the object.
- The spacing between lines should be uniform.



**Correct**



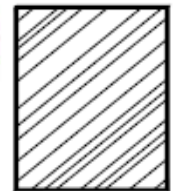
Hatching lines too close



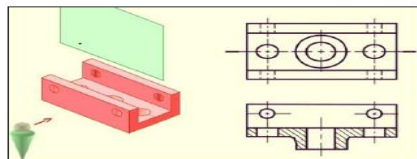
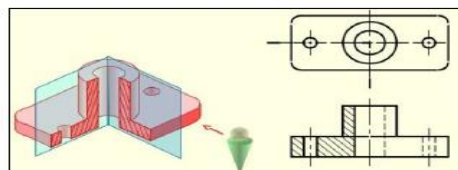
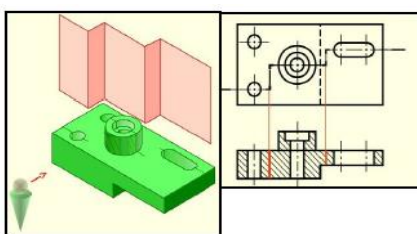
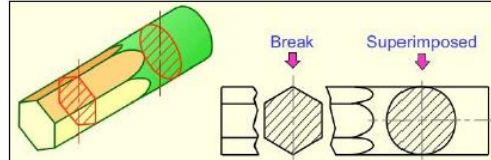
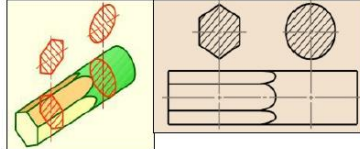
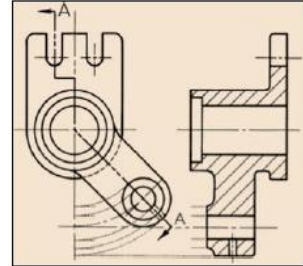
Hatching lines overlapping



Hatching lines too dark



Hatching lines uneven

Type of Section and description	Example
<p><b>Full Section</b> The view is made by passing the <i>straight</i> cutting plane <i>completely through</i> the part.</p>	
<p><b>Half Section</b> The view is made by passing the cutting plane <i>halfway</i> through an object and removes a <i>quarter</i> of it.</p>	
<p><b>Offset Section View</b> The view is made by passing the <i>blended</i> cutting plane <i>completely through</i> the part.</p>	
<p><b>Revolved Section</b> Placement of revolved section: i. Superimposed to orthographic view. ii. Break from orthographic view.</p>	
<p><b>Removed Section</b> Sections are removed.</p>	
<p><b>Aligned Section</b> Aligned sections use an angled cutting plane to pass through angled features. The plane and feature are then imagined to be removed into the original plane and the section projected from there.</p>	

### Exercise

1. Identify and sketch the different methods of sectioning.
2. Differentiate between full section and half section?
3. Research work – draw compression spring, tension spring, external and internal thread.

NOTE: Use the link given below to answer research question

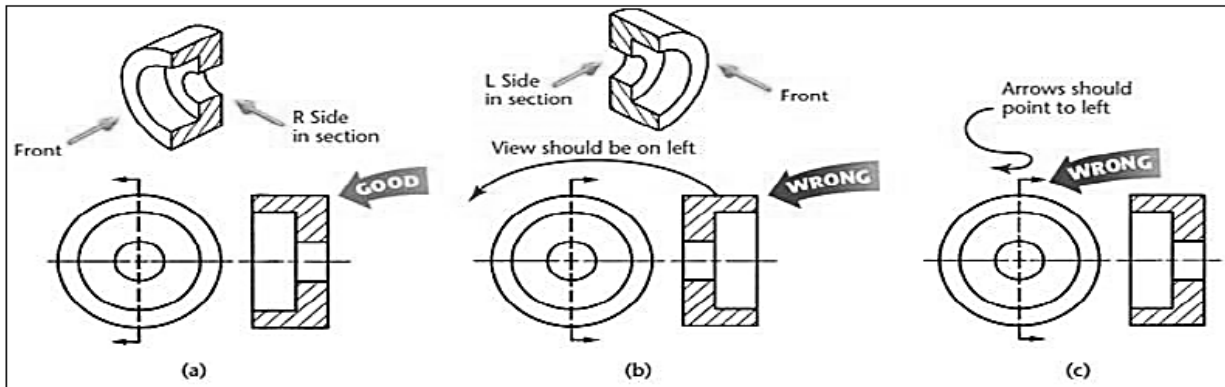
<https://slideplayer.com/slide/12241914/>

**Note: if you cannot print and paste the notes you can write in your note book. Answer all exercises in your note book.**

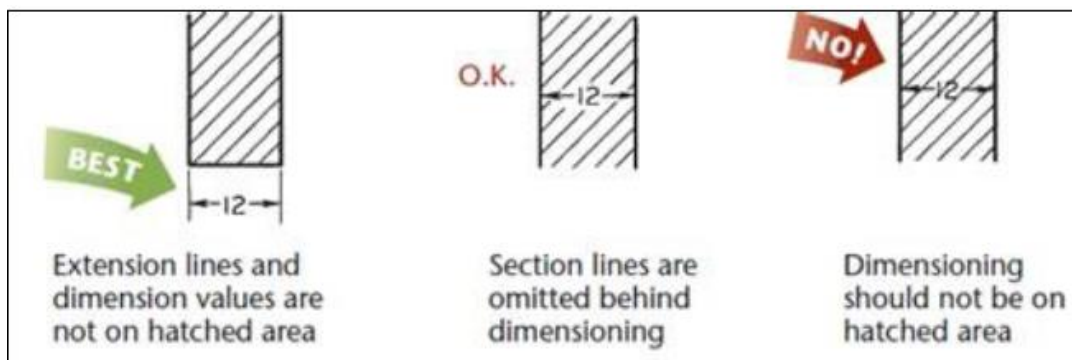
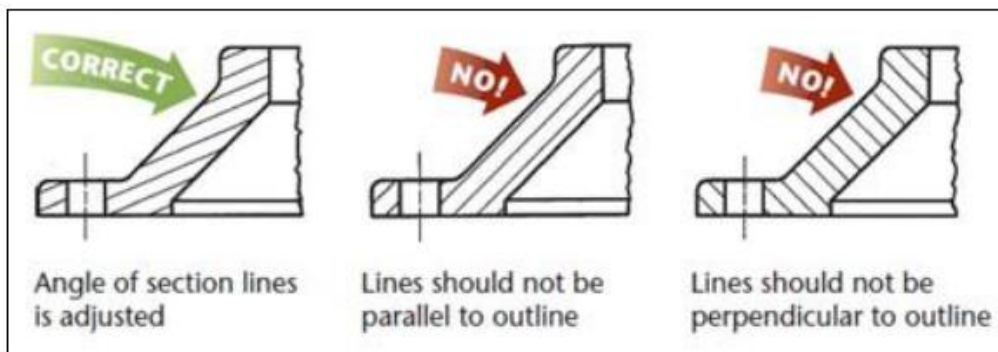
**SANGAM SKM COLLEGE - NADI**  
**LESSON NOTES – WEEK 2 AND 3**  
**YEAR 12**  
**TECHNICAL DRAWING**

<b>Strand</b>	Applied Drawing
<b>Sub-Strand</b>	Engineering Drawing
<b>Learning Outcome</b>	Identify the different types of engineering components. Discuss the different methods of sectioning. Develop, draw simple Plan and elevations and assembled engineering sectional drawings.

**Visualizing Cutting Plane Directions**



**Correct and incorrect Cutting Plane Line Placement**

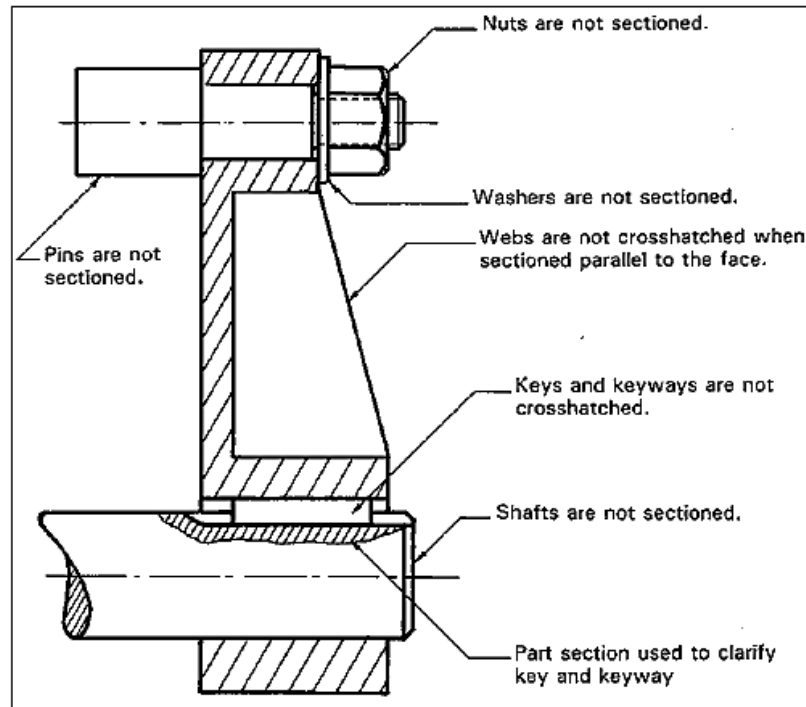


**Recommended parts not to be sectioned**

Ribs, lugs and other thin parts

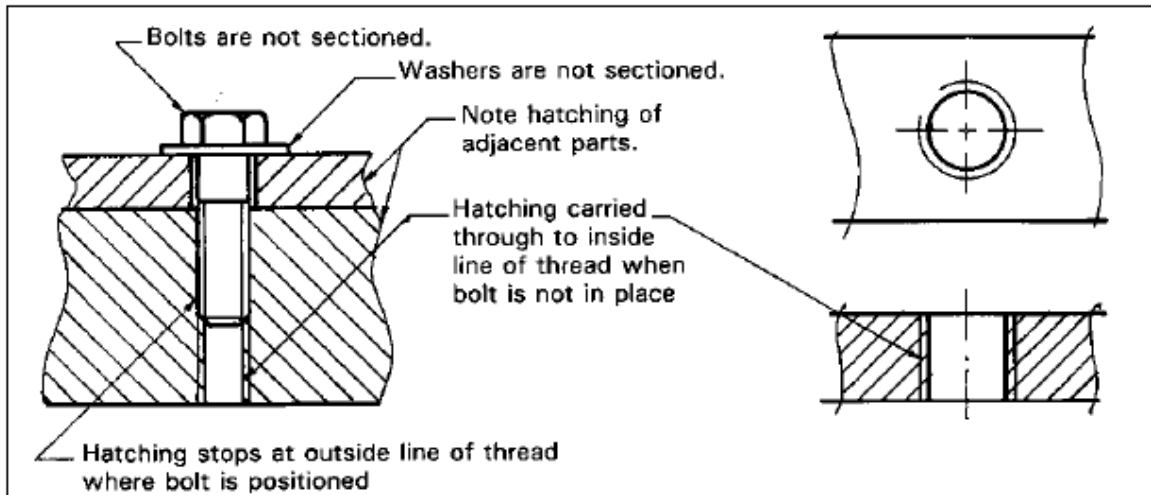
**Assembly Drawing**

Assembly drawing to show how a number of components are fitted together to make a complete product



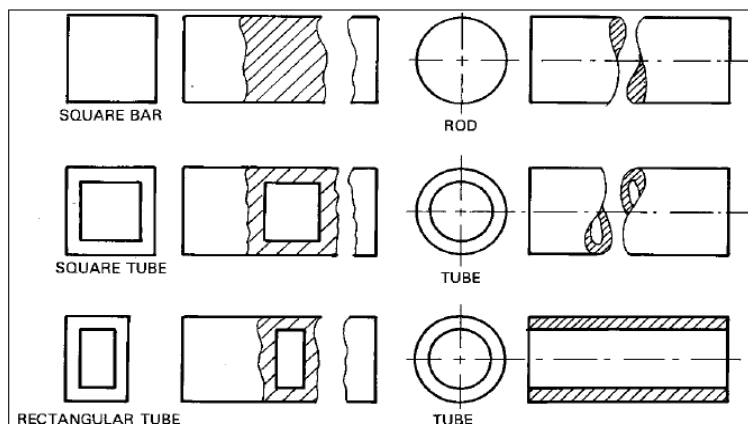
### Bolts and Screw threads

Conventions to be observed when cutting plane contains the centre line of the bolts and screw threads are illustrated below.

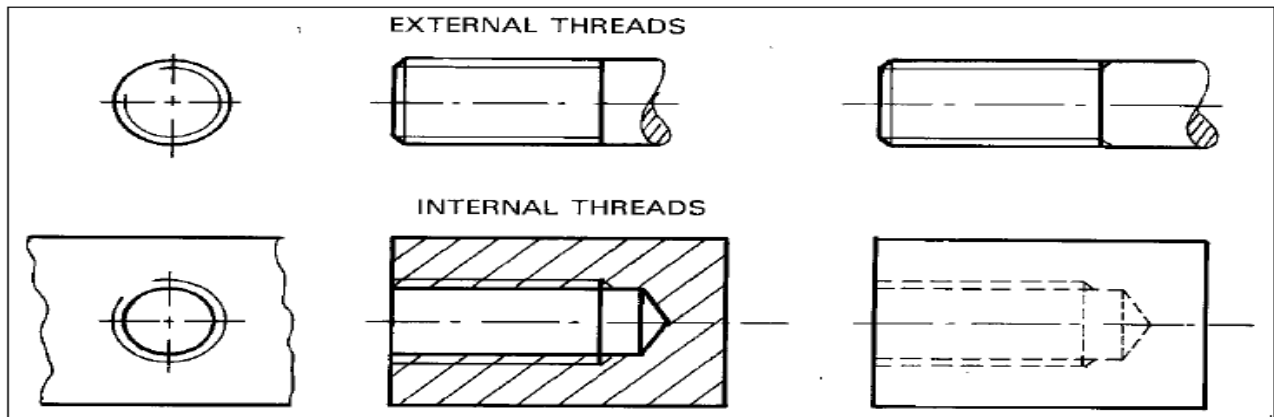


### Conventions

#### Bars and Tubes

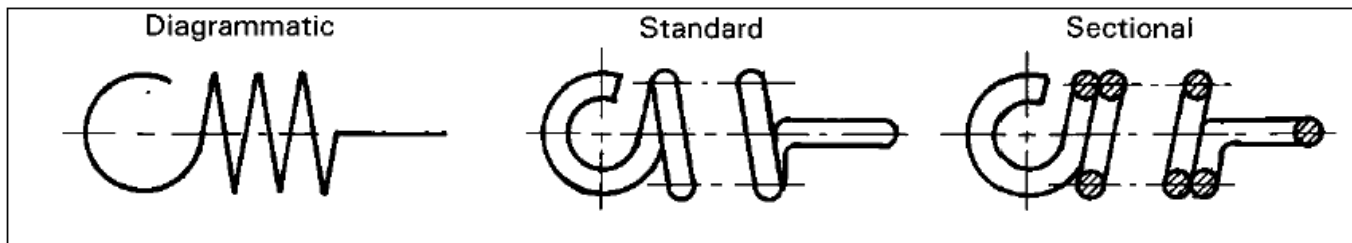


## Internal and External Threads

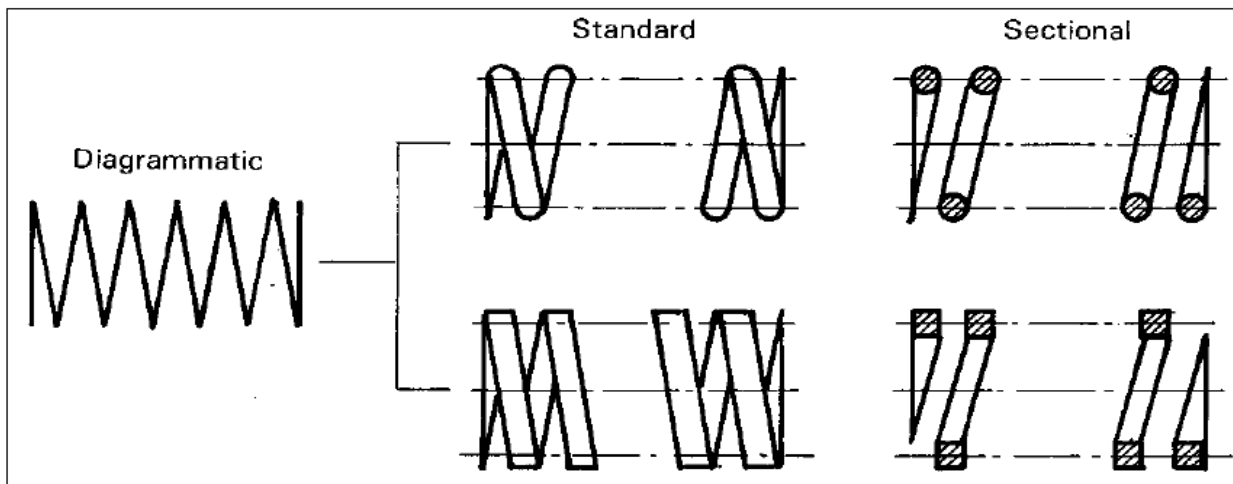


## Springs

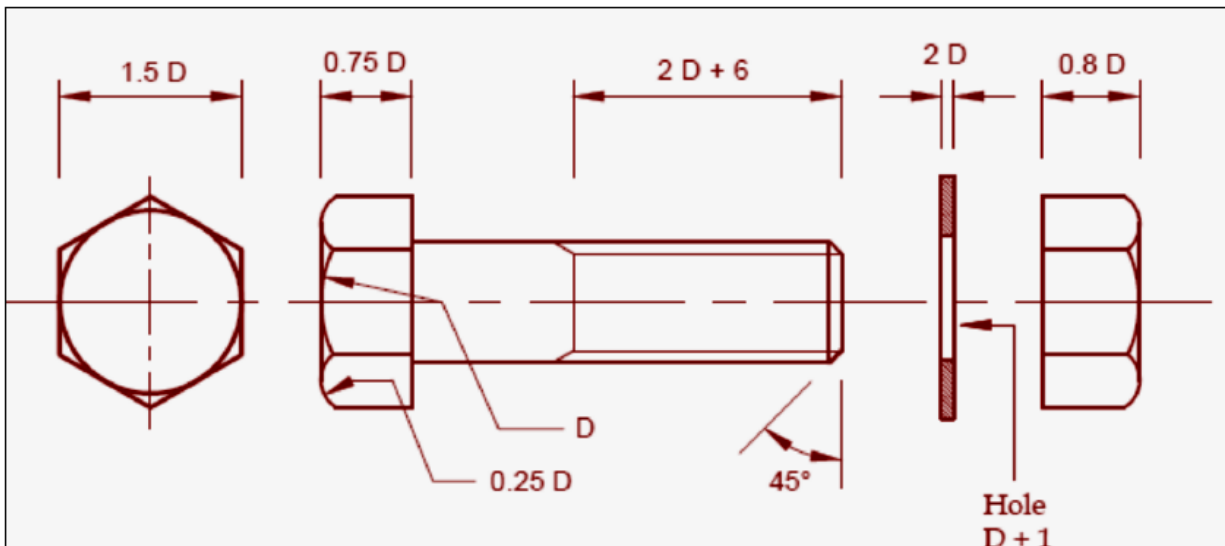
### Tension Springs



### Compression Spring



## Proportion of Nut, Bolt and Washer



### REVIEW QUESTIONS

1. Differentiate between internal and external threads and draw their sketches.
2. Differentiate between tension and compression springs.
3. Name the engineering parts that are not sectioned in a sectional view and why?
4. Refer to **SHEET NUMBER 32** of your TD workbook and Match each alphabet from the drawing with the correct term from the column, solutions.
5. Refer to **SHEET NUMBER 34** of your TD workbook and Complete the sectional elevation A-A  
Project the Plan view.
6. Differentiate between across corners and across flats.

Note: refer to the link stated below:

<https://www.youtube.com/watch?v=HckBUZWG6g4>

*Note: if you cannot print and paste the notes you can write in your note book. Answer all exercises in your note book.*