تعليمات (Instructions Regarding INT0001)

١- مرفق قائمة بادوات الرسم المطلوبة.

٢- يلتزم الطلبة منذ الاسبوع الاول بالحضور فى موعد الحصة ومعة جميع ادوات الرسم مع كتاب التمارين ولوحات الرسم البيضاء. مرفق قائمة بادوات الرسم المطلوبة.

٣- الجدول الزمنى لحضور طلبة اعدادى للكلية لمتابعة حصص الشرح والتمارين لمادة الرسم الهندسى:

أ- الاسبوع الاول: يحضر الطلبة المصنفة A من الساعة ١٠ً ص حتى الساعة ٣,٣٠ عصرا.
ب- الاسبوع الثانى: يحضر الطلبة المصنفة B من الساعة ١٠ً ص حتى الساعة ٣,٣٠ عصرا.

ت- الاسبوع الثالث: يحضر جميع طلبة الفصل الواحد (A & B) فى موعد الحصة مجتمعين من الساعة ١٠ً ص حتى الساعة ٣,٣٠ عصرا.
ث- الاسبوع الرابع: يحضر جميع طلبة الفصل الواحد (A & B) فى موعد الحصة مجتمعين من الساعة ١٠ً ص حتى الساعة ٣,٣٠ عصرا.
ج- الاسبوع الخامس: يحضر جميع طلبة الفصل الواحد (A & B) فى موعد الحصة مجتمعين من الساعة ١٠ً ص حتى الساعة ٣,٣٠ عصرا.

ح- الاسبوع السادس: يحضر الطلبة المصنفة B من الساعة ١٠ً ص حتى الساعة ٣,٣٠ عصرا.
خ- الاسبوع السابع: يحضر الطلبة المصنفة A من الساعة ١٠ً ص حتى الساعة ٣,٣٠ عصرا.

د- الاسبوع الثامن: امتحان نصف الترم لجميع الطلبة حسب جداول الكلية.

Drawing Tools

The following list includes the drawing tools and other materials required for the preparation of any drawing works:

1. Scale ruler (300 mm),
2. T square,
3. Triangles' set [30°/60° and 45°],
4. Compasses and divider,
5. Sand paper block,
6. Pencils 0.5 mm (2H) and 0.7 mm (HB)
7. Protractor,
8. Eraser,
9. Erasing shield,
10. Cello tape,

11. Hand kerchief,
12. Yellow napkin (2 pieces),
13. Drawing sheet (size 500x350 mm - such sheets are available in the printing shop of the collage),
14. Sketch book (squares 5 mm),
15. File.

Lectures and tutorials regarding the "Engineering Graphics" will start from the first day (17/10/2020), accordingly, the students having Engineering Graphics, as per the lectures time table, should bring the tools with.

Please read the following paragraphs to know more regarding the drawing tools.

A. Drawing TOOLS

1. T - square

It consists of a working edge and along blade attached to it at right angle as shown in Fig. (1-1). The working edge slides on the drawing board while the blade is used to draw horizontal lines as shown in Fig. (1-2)

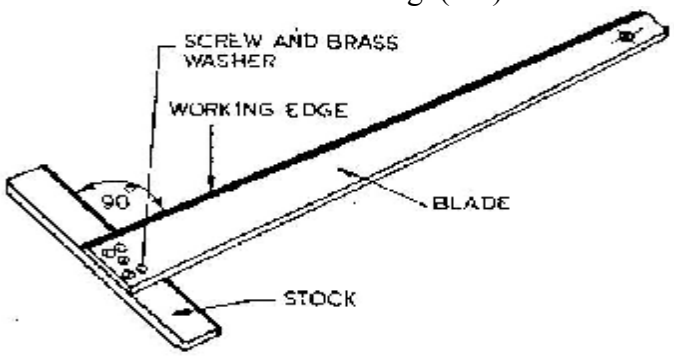


Fig. (1-1) T- square

Uses of T-square:

The following are the uses of T-squares:-

i. The T-square is mainly used for drawing horizontal lines. Figure (2-3) illustrates the way of drawing horizontal lines along-with the position of hands.
ii. T-square is used as a base for drawing various angles with the help of triangles' set as shown in Fig. (2-1 & 2-2)

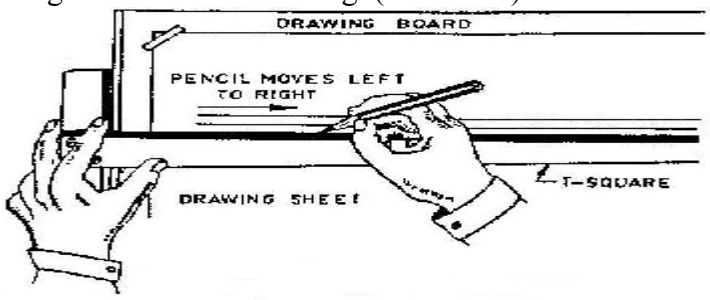


Fig. (1-2) Drawing horizontal lines

2. Set of triangles

They are two right angled triangles, made of transparent material. One triangle is 45 x 45, the other is 60 x 30. Triangles are used to draw vertical lines with help of the T - square. Also they are used to draw inclined and parallel lines, as shown in Fig. (2-1) and (2-2).

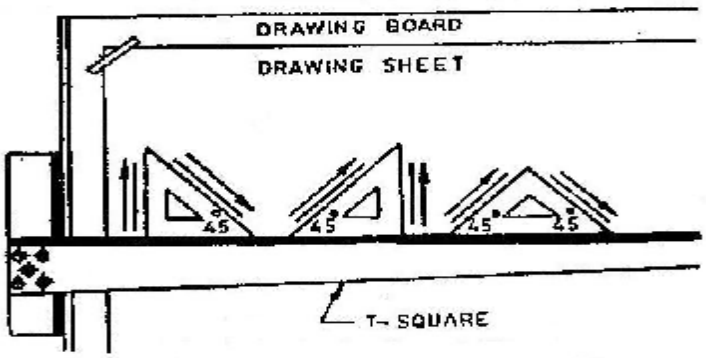


Fig. (2-1) Drawing lines at 45° and 90°

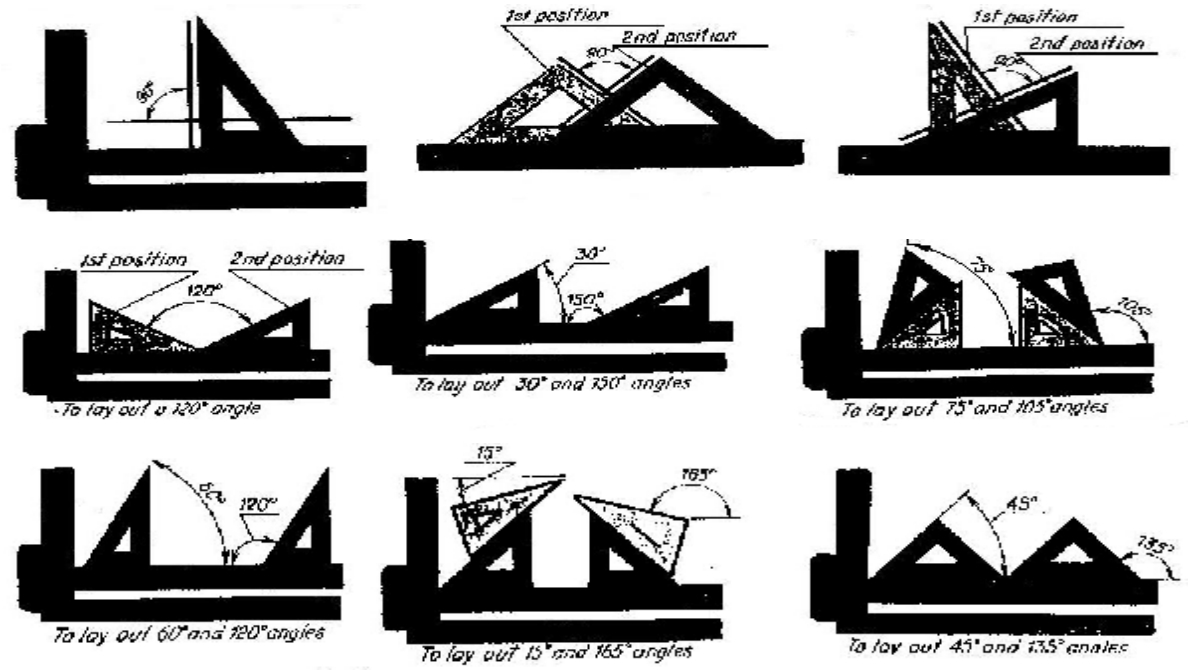


Fig. (2-2) Drawing Lines at 15°, 30°, 45°, 60°, 75°, and 90°

3. Mechanical pencils

It is a pencil with refill graphite leads in different grades. Use grade 2H for pencil of 0.5 mm and HB for pencil of 0.7 mm. Grades vary between the hardest (4H) to the softest (7B). Commonly one may use 2H for drawing and HB for finishing.

4. Set of drawing instruments

It includes at least compass, divider and pencil bow. The set is used to draw circles and arcs.

Compass and Dividers:

The compass, shown in Fig. (4-1) and (4-2) allows creating arcs and circles. A compass consists of two metal shafts connected in such away that the relative distance between them can be controlled. Each shaft of the compass has a socket in which an attachment may be inserted. One attachment is a metal needlepoint; another is a pencil lead with which line work can be generated.

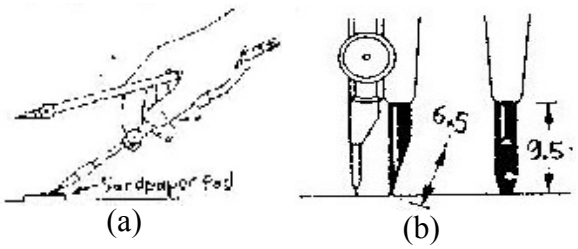


Fig. (4-1) Sharpen the lead of the compass with sandpaper (a). The resultant lead point should be inclined (b).

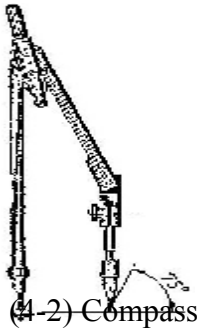


Fig. (4-2) Compass with needlepoint and lead tip

The Lead tip of the compass should be sharpened by rubbing it against sandpaper to obtain an inclined surface Fig (4-1). The lead should be adjusted in the socket joint so that the metal needlepoint extends slightly more than the pencil lead, as shown in Fig. (4-2).

Dividers are very similar in appearance to the compass. The difference between these two drawing instruments is that the dividers have two metal needlepoint in the sockets whereas the compass has one needlepoint and a pencil lead. Dividers eliminate that task of measuring distances on a drawing in order to transfer a distance from one location to another or to divide a distance into equal intervals, as shown in Fig. (4-3)

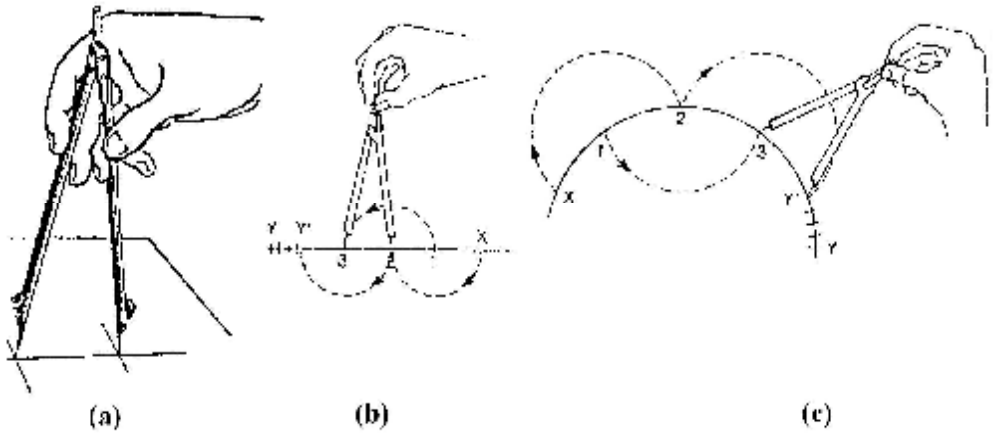


Fig. (4-3) Dividers are held between the thumb and index finger (a), and then rotated to produce approximately equal intervals between two points on a straight line (b) or a curved line (c).

5. Scales

It is made of wood, plastic or metal in variety of shapes. The edges of scale are graded in full and open divisions. Scale is used for accurate measurements, which is taken directly off the scale, as shown in Fig. (5-1).

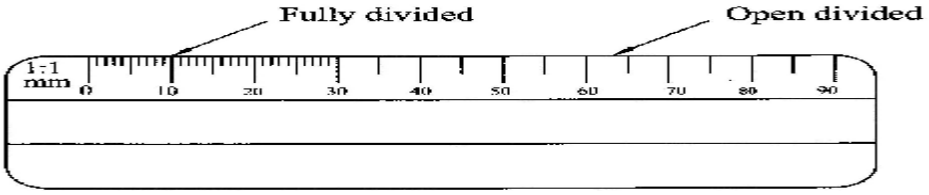


Fig. (5-1) The metric scale is used to measure
distances in meters, centimeters, and millimeters.

6. Eraser

Good quality eraser should be used as clean erasing is necessary to keep clean drawings.

Cares in handling

(1) Frequent use of rubber should be avoided.

(2) Rubber crumbs should be swept away with a duster and should not be brushed off with hands

7. Erasing shield

An erasing shield is used to protect the adjacent lines on the drawing when some part of a line is being erased. It is usually made of thin sheet metal in which gaps of different width, curves, small circles, arcs, etc. are cut according to the lines to be erased, see Fig. (7-1).

8. Cello-tape

Now-a-days, cello-tapes are used in place of drawing pins for its practical convenience as the drafting machine. T-square and set-square can be moved very easily over the tape. It is transparent and is available in rolls varying in width from 13mm to 35mm.

10. Sand paper

Soft sand paper is used to sharpen pencil lead.

11. Razor (Cutter)

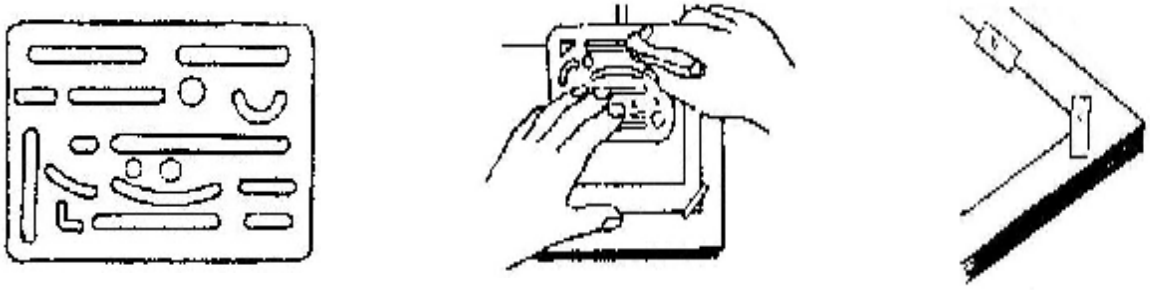
To cut cello tape or sharpen pencils.

12. Set of graphite leads

Three Leads of (2H) and three leads of (HB) to be used with the mechanical pencil.

13. Yellow napkin

A soft napkin is to be used for cleaning the drawing instruments and drawing board.



(i) Erasing shield (ii) Use of erasing shield Cello tape

Fig. (7-1)

B. Attaching Drawing Sheet to Board

The drawing sheet can be attached to the board with drafting tape, thumbtacks or staples. Cello-tape is preferred because it does not damage the board.

Before attempting to attach the paper to the board, remove all eraser crumbs. To attach the paper, place the sheet on the board, as shown in Fig. (B-1(i)). Left -handed drafters should use the upper right hand corner of the board.

Place the T - square on the board with the head firmly against the left edge. Slide it up until the top of the blade is in line with the top edge of the drawing sheet, see Fig. (B-1(ii)). Position the sheet so the top edge is parallel with the T - square blade and fasten the drawing sheet.

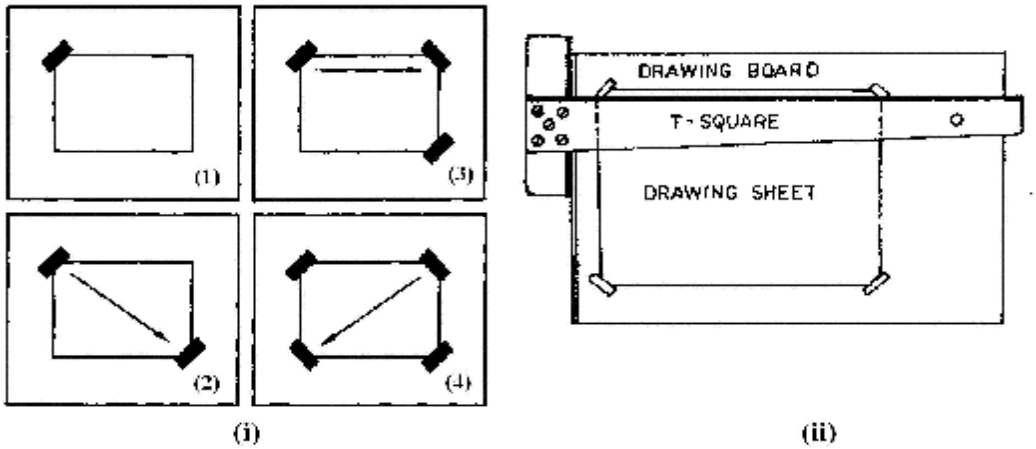


Fig. (B-1) Fixing the drawing sheet on the drawing board.