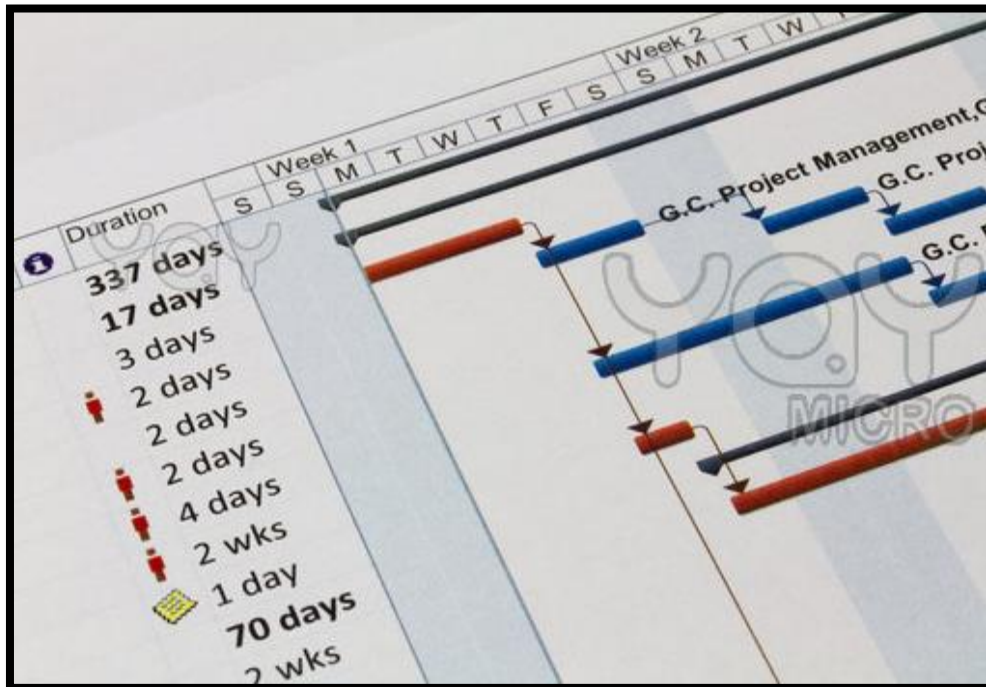


Ministry of high Education and Scientific Research  
Foundation of Technical Education  
Electrical and Electronic Technical College  
Computer Engineering Department

## Mode Unit in study Gantt chart (Bar-chart)

For  
Students of Fourth Stage  
Computer Department



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### 1. Overview

- a. **Target Population:** For students of stage of second and fourth stage in technical Colleges and institutes in foundation of technical education.

- b. Rationale:** A Gantt chart is a type of bar chart that is useful for showing the scheduled and actual progress of a project. Developed by Henry Gantt in the 1917, the Gantt chart is now regarded as the standard project management charting technique. Its simplicity allows it to be easily understood by many people and with the use of computer software; a Gantt chart can be generated and modified very quickly and easily. This mode unit introduces of project planning techniques (Gantt chart), its objectives, steps and benefits.
- c. Central Ideas:** The basic purpose of a Gantt chart is to break a large project into a series of smaller tasks in an organized way. The chart shows when each task should begin and how long it should take. The left-most column lists each of the tasks in chronological order according to their start time. The remaining columns show the timeline (often shown in weeks, but use whatever units are convenient for your project). For each row, a task is listed and a line is drawn through the timeline for the weeks during which that task will be addressed.
- d. Objectives:** The student will be able after finishing lecture on:
- Define Gantt chart.
  - Study steps of Gantt chart.

## 2. Pre-Test:

1. There are three techniques to plan the project -----, ----- and -----.
2. A Gantt chart is a horizontal bar chart developed as a production control tool in 1917 by -----,
3. Define the term 'Gantt chart'.
4. Gantt chart helps in planning out the tasks that need to be completed. State True or False
5. The technique used for scheduling the tasks and tracking of the progress of energy management projects is called
  - a) CPM
  - b) Gantt chart
  - c) BEP
  - d) PERT

**Note:** Check your answers in “Answer Keys” in end of mode unit. If you obtain 75% of solution, you cannot need to this mode unit. If your answer is poor, you will transfer to next page.

## 3. Theory:

### Introduction

## Objectives

- To improve the distribution of wealth: Circulation of wealth is necessary to reduce the gap between the rich and the poor community. Circulation and well distribution of wealth also ensures that all the people receive basic necessities of life e.g medical, educational, security etc.
- Study of money for public welfare

### 4. Self-Test:

1. Gantt chart gives a basis for scheduling when these tasks will not be carried out. State True or False
2. What is the main objective of Gantt chart?

## Description

3. Gantt chart is a horizontal bar chart developed as a production control tool in ----- by Henry L. Gantt.

**To draw up a Gantt chart, it must follow these steps:**

**Step 1** - List all activities in the plan. For each task, show the earliest start date, estimated length of time it will take, and whether it is parallel or sequential. If tasks are sequential, show which stages they depend on.

**Step 2** - Head up graph paper with the days or weeks through to task completion.

**Step 3** - Plot the tasks onto the graph paper. Next draw up a rough draft of the Gantt chart. Plot each task on the graph paper, showing it starting on the earliest possible date. Draw it as a bar, with the length of the bar being the length of the task. Above the task bars, mark the time taken to complete them.

**Step 4** - Schedule activities. Now take the draft Gantt chart, and use it to schedule actions. Schedule them in such a way that sequential actions are carried out in the required sequence. Ensure that dependent activities do not start until the activities they depend on have been completed. While scheduling, ensure that you make best use of the resources you have available, and do not over-commit resource.

**Step 5** - Presenting the analysis. The final stage in this process is to prepare a final version of the Gantt chart. This should combine the draft analysis (see above) with your scheduling and analysis of resources. This chart will show when you anticipate that jobs should start and finish.

In constructing a Gantt chart, keep the tasks to a manageable number (no more than 15 or 20) so that the chart fits on a single page. More complex projects may require subordinate charts which detail the timing of all the subtasks which make up one of the main tasks. For team projects, it often helps to have an additional column containing numbers or initials which identify which one in the team is responsible for that task<sup>6</sup>. Gantt charts don't indicate task dependencies - you cannot tell how one task falling behind schedule affects other tasks. The PERT chart, another popular project management charting method, is designed to do this.

**Benefits**

1. Gives a clear illustration of project status.
2. May be adjusted frequently to reflect the actual status of project tasks.

3. Helps manage the temporal dependencies between tasks.

4. Gantt chart may be adjusted frequently to reflect the actual status of project tasks. State True or False

5. In constructing a Gantt chart, keep the tasks to a manageable number.

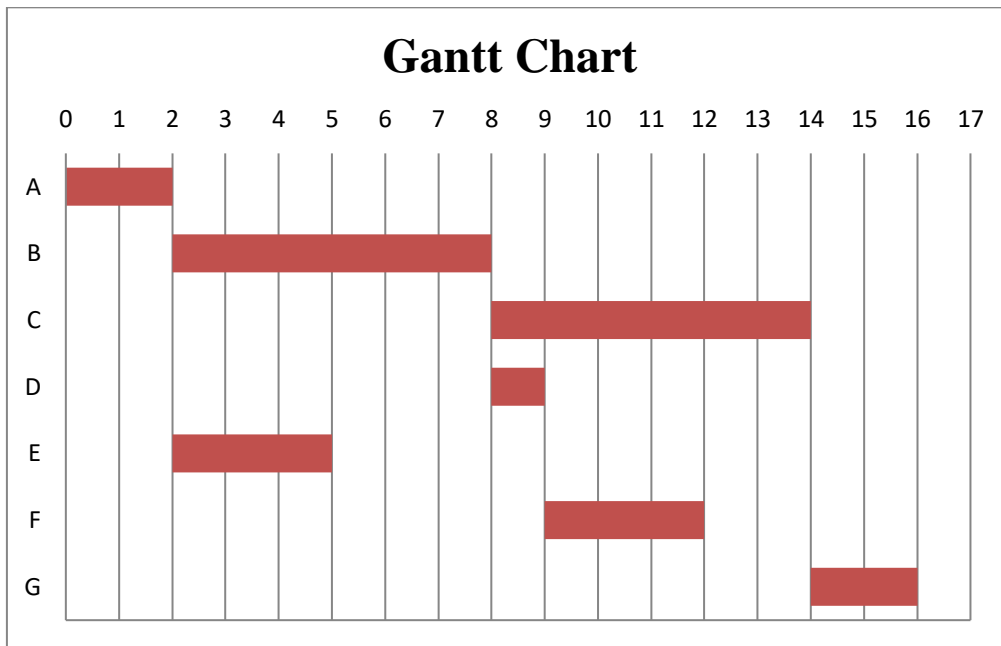
a) no more than 15 or 20    b) more than 25    c) less than 50    d) otherwise.

**EXAMPLE 1:**

In the following case study is present a Gantt chart (generated with Microsoft Project)

Activity	Preceded by	Followed by	Duration (Weeks)
A	—	B, E	2
B	A	C, D	6
C	B	G	6
D	B	F	1
E	A	F	3
F	E, D	G	3
G	C, F	—	2

Ans:



E,f=4 weeks float                      paths

A,B,C,G= 16 weeks                      , A,B,D,F,G= 14 weeks                      , A,E,f ,G= 10W

F,G=2 weeks float                      c.p= 16 weeks                      (A,B,C,G) critical path

## 5. Post- Test

1. There are three benefits of Gantt chart -----, ----- and -----.
2. Gantt chart provides a ----- of a schedule that helps to plan, coordinate, and track specific tasks in a project.
3. Gantt chart allows to plan the allocation of resources needed to complete the project.  
State True or False
4. The technique used for scheduling the tasks and tracking of the progress of energy management projects is called
  - a) Gantt chart
  - b) CPM
  - c) BEP
  - d) PERT
5. The number of tasks in constructing a Gantt chart must be.
  - a) no more than 15 or 20
  - b) more than 25
  - c) less than 20
  - d) choose a) and c).

**Note:** Check your answers in “Answer Keys” in end of mode unit.

## 6. References

1. GANTT CHART Category: Planning/ Monitoring – Control  
<http://www.netmba.com/operations/project/gantt/>
2. W. Durfee and T. Chase, “Project Management - Gantt Chart Tutorial” University of Minnesota, 2003
3. J.R. Meredith and S.J. Mantel “Project Management”, J. Wiley & Sons, 1995.
4. <http://www.projectmanagement.com/main.htm>

## Answer Keys

### Pre- Test

1. Gantt chart, CPM and PERT.
2. Henry L. Gantt.
3. Gantt Charts is useful tool for analyzing and planning complex projects.
4. True
5. b) Gantt chart

### Self-Test

1. False
2. The main objective of a Gantt chart is to assess how long a project should take and to establish the order in which tasks need to be carried out by the ending of the project.
3. 1917
4. True.
5. a) no more than 15 or 20

### Post- Test

1.
  - a. Gives a clear illustration of project status.
  - b. May be adjusted frequently to reflect the actual status of project tasks.
  - c. Helps manage the temporal dependencies between tasks.
2. Graphical illustration.

3. True.
4. a) Gantt chart
5. d) choose a) and c).



In the following case study is present a Gantt chart draw the chart and  
 Determine float and critical path

Activities	Preceded by	Duration (week)	Description
A	None	1	DESCRIPTION OF ACTIVITY
B	A	4	
C	A	3	
D	B, C	5	
E	B	2	
F	D	3	
G	E,F	6	