

## Microsoft project.

- \* Time based plan for coordinating various plans & resources.
  - \* planning is process of developing project plan.
1. Work task: Represents necessary framework to permit scheduling of construction activities, along with estimating resources required by the individual worktask & necessary precedence or required sequence among task.
2. Scheduling: It means putting plan on calendar basis a project network shows the sequence & interdependency of activities their time & their earliest and latest completion time but these needs to be scheduled to determine the commencement & termination dates of each activity.
3. CPM: It is widely used scheduling technique is the CPM often refer to as critical path scheduling this method calculate min. completion time for project along with possible start & finish time with project.
- \* Factors affecting work scheduling.
- i) Time: most project carry time constraints in pose dates these dates may include start & completion of activity.
  - ii) Manpower: it is one of the main component in execution of project, labour time is paid for & strikes and breakdown of work kept in view by manpower.
  - iii) Construction materials are becoming scarce & their procurement is time consuming, schedule aids in forecasting of

materials & their timely supplies.

### Terms

1. **Float**:- The difference b/w the latest start time & earliest start time of an activity.
2. **Total float**: total float of activity is defined b/w max duration of time available for completion and duration req'd to carry out activity.
3. **Resource leveling**: the aim is to reduce the peak resource requirement & smooth out period assignment within a constraint of project duration.
4. **Crashing** → higher amount of direct activity cost associate with smaller activity duration time while long duration time involve comparatively lower cost such deliberate reduction of activity by putting extra effort is called crashing.

### \* Tools in msp.

1. Milestone.
2. baseline.
3. project summary.
4. change working time.
5. Project information.
6. task.
7. gantt chart.
8. critical path.
9. resource sheet.

Experiment No. ....

Date : .....

10. resource allocation.
11. resource constraints.
12. project report.
13. network diagram.
14. project budget.

\* Flow of work.

1. preliminary Survey:- site visit, detailed survey, preliminary plan, services plan, inspection.
2. Finalize site plan:- point final plan, finalize estimate, work order permit.
3. site preparation:- site visit, material estimation, material procurement.
4. earthwork:- clean up site, removing trees & debris, grading and leveling.
5. Foundation:- layout for footings, form work for cc bed, installation of reinforcement, preparation of concrete, concrete pouring, construction of cc bed.
6. construction of floors:- cutting & fixing of flooring level, preparation of concrete, concrete pouring, curing.
7. construction of columns: installation of formwork, reinforcement, preparation & pouring of concrete and cutting.

Experiment No. ....

Date : .....

8. construction of beams.
9. construction of walls: preparation of concrete mortar, brick masonry, curing -
10. construction of slab: installing formwork, reinforcement, preparation and pouring concrete.
11. plumbing.
12. doors & windows.
13. Electrical roughing.
14. plastering.
15. paint
16. applying decoratives
17. handing over.
18. moving

## Preparation of schedule for a project by using MS project.

Aim:- To prepare a schedule for new project by using MS project.

### Procedure:

1. open ms project file.
2. go to project → project info → schedule form → click project → start date & end date → saturday as working day.
3. go to standards → ok → change working time, day, month, week etc.
4. go to details, → non working → start & end by dates → ok.
5. go to change work time → options → schedule → give working hours per day → go to display → change currency.
6. go to advanced → default standard rate is changed to per day.
7. click on resource → assign resource.
8. add all task → assign start & end date
9. after completed task, select main works & format, click on task for giving works under main task.
10. format → generate chart wizard → critical path → New → Resource → date & time → next → format.

### STAAD - PRO

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Material	unit weight [KN/m³]
plain concrete.	24.0
Reinforced concrete	26.5
glass	7.5
min steel	7.8
hard wood	11.0
soft wood	8.0

Structural analysis & design computer programme.

### Introduction:-

STAAD PRO is structural analysis & design computer programme originally developed by research engineers international at Yorba Linda, CA in 1997. In late 2005 Research Engineers International was bought by Bentley Systems.

An older version called STAAD-III for windows is used by IITKAA State University for educational purpose for civil & structural engineering.

### Types of structures:-

different structures analyzed by staad are

space:- A 3D solid structures with loads applied in any plane. This structure type is most general.

plane:- A plane consists of truss members that carry only axial force without bending.

frame:- A frame consists of rigid joints or pinned joints which are connected by horizontal and vertical members. It is used to model buildings, bridges, etc.

shell:- A shell is a thin-walled structure that carries horizontal and vertical loads.

support:- staad allows specification of supports that are passive or active as inclined to the global area.

supports are pinned, fixed, or-fixed with different releases. pinned support has restraints against all moments.

Experiment No. ....

Date: .....

### Load5:

- i) Live load:- all unfixed items in building such as people furniture results in the live load in a structure.

### Dead load:-

- dead load on the structure is a result of the weight of permanent components such as beams, floors, columns, slabs etc.

### Joint loads:-

- Both forces and moments can be applied to any free joint of a structure. These loads acts in the global co-ordinate system of structure.

### member load:-

- Three types of member loads can be applied to a member of a structure. Three loads are UDL, UVL & concentrated load.

### area load (or) floor loads:-

- a floor load is subjected to uniform pressure It could require a lot of work to calculate the equivalent member load for individual member in that floor. with the area load & floor load you can specify pressure.

## Live load

For floor as per building	UDL (KN/m <sup>2</sup> )
House (Residential) [apartment]	1.5
office	2.0
workshop	3.0
parking	5.0
hospital / school	3.0
bars / lodge	5.0



