

* Resource Loading:-

- It is the process of assigning & scheduling project resources - such as human resource, materials, equipment & budget - across tasks & timelines to ensure smooth project execution.
- It helps PMs to distribute workload effectively, optimize productivity & avoid underutilization or overloading of resources.
- Ex. If a team member works 40 hrs a week & is assigned 20 hours of project tasks, their resource loading is:-

$$\frac{20}{40} \times 100 = 50\%$$

which means employee is working at 50% of their capacity.

• Components of Resource Loading:-

- 1) Resource Identification:-
 - Determine what resources are needed (people, equipment, materials) are needed.
 - Identify their skills, availability & cost.
- 2) Workload Distribution:-
 - Assign tasks to resources while considering their working hours & expertise.
 - Distribute work evenly to avoid bottlenecks.
- 3) Capacity Planning:-
 - Assess if the available resources can meet the project demands.
 - compare workload with resource capacity to ensure realistic schedules.
- 4) Resource Availability:-
 - consider factors like holidays, sick leaves & training schedules.

Ensure key resources are not overlooked across multiple projects

Page No.	
Date	/ /

Time Mgmt & Scheduling:-

allocate resources based on task priority & project timeline

Use scheduling tools like Gantt charts or resource histograms

* Types of Resource Loading:-

1) <u>Full Loading</u> A resource is assigned tasks that fully utilize its capacity (100%) Ex. A m/c that operates 8 hours per day is scheduled for 8 hrs of work.	2) <u>Partial Loading</u> A resource is assigned tasks that use only part of its capacity (<100%) Ex. A slw developer working 4 hrs on one project & 4 hrs on another.	3) <u>Overloading</u> A resource is assigned tasks that exceed its capacity (>100%) Ex. A PM working 60 hrs a week when their std. capacity is 40 hrs. - This can lead to delays, burnout or quality issues.
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* Difference betⁿ Resource Loading Vs. Resource Leveling

Aspect	Resource Loading	Resource Leveling
1) <u>Defⁿ</u>	Assigning resources to tasks is called Resource Loading	1) Adjusting schedules to resolve conflicts is called Resource Leveling.
2) <u>Focus</u>	Focus is on efficient utilization	2) Focus on to balance workload to prevent overloads
3) <u>Flexibility</u>	It is having fixed schedule.	3) It adjusts schedule if needed.
4) <u>Goal</u>	Goal is to maximize productivity	4) Here it ensures sustainable workload.
5) <u>Method</u>	Directly assigns resources.	5) Delays or redistribute task to balance workload.