

GTO Graduate Training Finding the Critical Path Module Student Guide



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Introduction

Welcome to the “Finding the Critical Path” Student Guide. Identifying the critical path and ensuring that all project stakeholders understand the critical path are critical to ensuring that everyone works together effectively for a successful project.

Goals for the “Finding the Critical Path” Module

Upon completion of the exercises in this module, you will be able to do the following:

- Understand the important of identifying the critical path
- Identify the critical path for a project

Learning Icons

You’ll see the icons below throughout your workbook. They’ll help you know what to do at each step of the exercises.



Watch

Watch a video or instructor-led demonstration to learn how to perform the activity.



Do

Try something new, practice, or complete an activity.



Discuss

For each work back schedule, discuss the following in your small groups and write down your observations.

Exercise 1. Benefits of knowing the critical path

Step 1. View the vignette on benefits of the critical path



Watch

Watch a video or instructor-led demonstration to learn the benefits of knowing the critical path.

As you are watching the vignette, make note of the benefits:

Exercise 2. The importance of communicating the critical path

The purpose of this group exercise is to help you to understand why it is important for **all** project stakeholders to have a common understanding of the critical path for a project. The critical path identifies all tasks that have zero (or negative) float time—tasks that cannot be started late without impacting the ability to successfully deliver the project on time.

Step 1. Identify the tasks required for you to get ready for work in a typical morning.



Try

In this step, you will create a very simple work back schedule that includes all of the tasks required for you to get to work on time in a typical morning.

1. Use the “Project: Getting to Work on Time” table to identify the tasks. Be as detailed as possible in the time allotted and include time of tasks owned by others.

Note: You will be sharing this with your group, so use some discretion.

2. On a separate piece of paper (note card or sticky note) indicate which tasks you believe cannot slip without causing you to arrive late to work. Do not reveal these to your group.

Step 2. Guess the critical path



Try

Next, you will guess at the critical path for other projects in your small group given only the work back schedule.

1. Trade notebooks with someone in your small group.
2. Review the other person's "Getting to Work on Time" Project work back schedule.
3. Select the tasks you believe cannot slip without impacting the ability to successfully complete the project (i.e., get to work on time). Document the tasks by Task ID on the following line.

Tasks: _____

Note: The person who created the work back schedule should **not** give any hints, but can answer questions about what the tasks are.

Step 3. Discuss the critical paths



Discuss

For each work back schedule, discuss the following in your small groups and write down your observations.

Does the person who created the project work back schedule agree with you on the critical path? Why or why not?

What are the consequences of missing tasks on the critical path?

Exercise 3. Identify the critical path

So far, we have taken an informal approach to understanding the critical path, but there are formalized methods to provide consistency and accuracy. In this exercise, you will practice using the Forward/Backward Pass method.

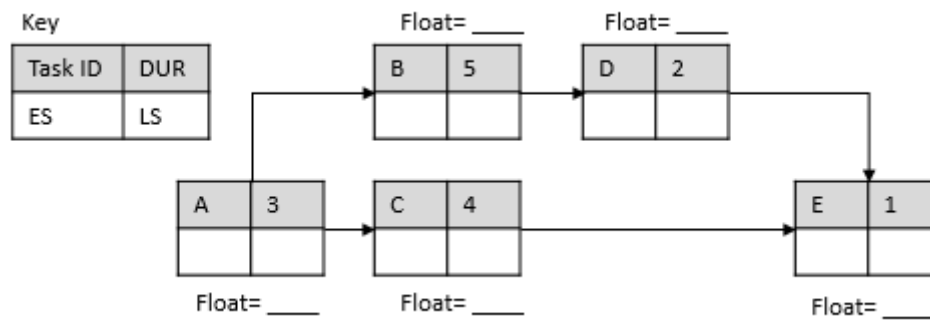
Step 1. View the video on using the Forward/Backward Pass method



Watch

Watch a video or instructor-led demonstration to learn how to identify the critical path using the Forward/Backward Pass method.

1. Follow along with the video to complete the network diagram.



2. Complete the following:

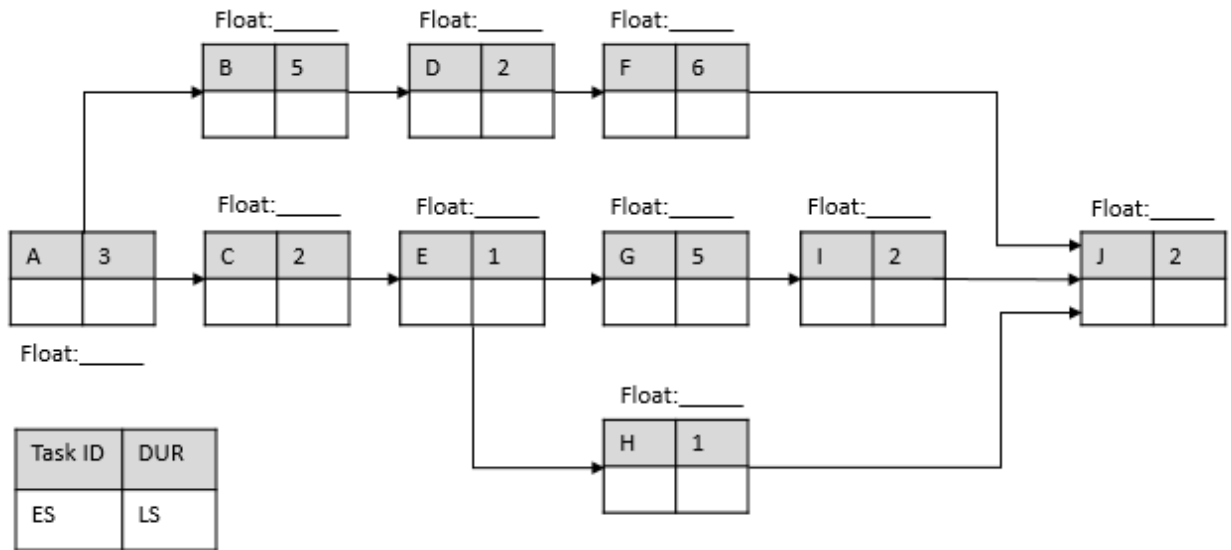
- The Forward Pass identifies the ____ values.
- The ES for the first task is ____, since the earliest possible start time is day ____.
- $ES(\text{Current}) + DUR(\text{Current}) = \text{____} (\text{Successor})$
- On the Forward Pass join, use the _____ value to join.
- The Backward Pass identifies the ____ values.
- For the last task, set the LS to _____.
- $LS(\text{Current}) - DUR(\text{Predecessor}) = \text{____} (\text{Predecessor})$
- On the Backward Pass join, use the _____ value to join.
- $\text{Float} = \text{____} - \text{____}$

Step 2. Practice identifying the critical path



Try

Complete the following network diagram using the Forward/Backward Pass method.



Step 3. Discuss your results with the class



Discuss

Discuss your results for this exercise.

1. What are the critical path tasks for this project? Recall that those tasks that have zero or negative float are critical path tasks.
