

Structured Approach to Problem Solving

Overview

This course – Structured Approach to Problem-solving is an introductory course that informs and equips you with the concepts and various methods and tools of problem thinking.

At the end of this course, you will be able to explain the different stages of a data science project and discuss some of the tools and techniques used in data science. You will also be able to apply structured thinking to solving problems and avoid the common traps while doing so. Finally, you will also be able to apply human-centric design in problem-solving.

This course also acts as the first steppingstone for aspiring data scientists. This course is a part of the program titled **Fractal Certified Data Scientist**.

Requirements/Prerequisites

There are no requirements or prerequisites for the course. To succeed in this course, all you need to have is a curious and logical mind. No programming skills are needed.

Course Structure

The course consists of the following materials:

- **Videos:** The lectures are delivered via videos, which are broken into small chunks, usually between five and seven minutes each. There would be in-video questions to help you reinforce your understanding of the concepts.
- **Reading:** We have made available pdf files of all the reading materials. There can be some external links or references for further reading.
- **Discussion Forum:** Discussion forums to exchange views and perspectives with peers.
- **Ungraded Practice Quizzes:** There will be *non-graded* short "quiz" questions that will follow some of the videos to help you gauge your understanding.
- **Graded Quiz:** There will also be *graded* quizzes that you will answer online.
- **Graded Assignment:** There will be graded assignments for submission.

Grading

Your grade in the course will be based solely on the assignments and the graded quizzes. You are free to follow the course without completing the graded assignments and quizzes, but then you will not receive a certificate of completion.

Course Topics

Week 1: Structured Thinking

Introduction, Course Overview, Overview of Data Science Projects, Introduction to Structured Thinking, and Defining Problem Statements.

Week 2: Solving Problems with Structured Thinking

Defining a Problem Statement, Frameworks of Solving Problems, MECE, Issue Tree, finalizing a Solution Approach, and Stages of Implementing a Solution.

Week 3: Human Centered Design

Human Centered Design, Empathy in Design, Problem Solving with Users at the Center.