Supplement to Chapter 1 of Sutherland,

Introduction to Metric and Topological Spaces (Second Edition)

The first three chapters of the book are a review of set theory as taught in a class like Mathematics 144, and the course itself has three main phases.

PHASE 1. Chapters 4 through 6 describe the process of generalization from the basic facts about continuous real valued functions on the real line to the theory of metric spaces and continuous functions.

PHASE 2. Chapters 7 through 11 describe the process of generalization from metric spaces to topological spaces.

PHASE 3. Chapters 12 through 14 describe the generalization of two basic facts about continuous real valued functions on intervals (the intermediate value property and the existence of absolute maxima and minima over ***closed*** intervals) to metric and topological spaces.