Examinable material — Notes and Slides

Done Block by Block.

(A) Basic material

Sec 1 Nothing there
Sec 2 Useful but not essential
Sec 3 Notation used throughout the course
Sec 4 Mostly notation
Sec 5 Not part of the course

Sl 0 Background information about the course.
(B) The cardinal comparison of sets

Sec 1 Notation and concepts
Sec 2 Diagonal argument and some important consequences
Sec 3 CSB result

Sl 01 Diagonal argument
Sl 02 Intro stuff
Sl 03 CBS
Sl 04 Some details of the proof
(C) $\mathbb{Q}$ and $\mathbb{R}$ as ordered sets

Sec 1 Background information
   The $\mathbb{R}$ results, Theorems 1.2 and 1.4, not done

Sec 2 Basic properties

Sec 3 Build up to next section

Sec 4 Back-and-forth technique
   Characterization of $\mathbb{Q}$

Sec 5 Characterization of $\mathbb{R}$
   Note part of course
   But you should know that $\mathbb{R}$ is dense and $\mathfrak{D}$-complete.

Sl 05 Background and build up to BandF

Sl 06 BandF
(D) Order types and ordinals

Sec 1 Background

Sec 2 Order types
   The construction of von Neumann ordinals not important

Sec 3 Addition

Sec 4 Multiplication
   The informal washing line argument allowed

Sec 5 Comparison of ordinals not done

Sl 07 Background

Sl 08 Addition

Sl 09 Multiplication

Sl 10 Some examples of arithmetic
(E) Axiom of Choice

Sec 1 Introduction
Sec 2 Definition + two equivalents
Sec 3 Example on the reals, not important
Sec 4 Another example – not done

Sl 11 Background information
Sl 12 Two ‘obvious’ equivalents
Sl 13 Material for Section 3 + a list of equivalents
Sec 1  Posets

Sec 2  Variants of ZL
       A couple of examples of its use
       ZL \implies AC

Sec 3  AC \implies ZL  Proof not done

Sec 4  KS with a couple of examples

Sl 14  ZL and its variants

Sl 15  An example

Sl 16  Two more examples

Sl 17  KS with an example for rings

Sl 18  A more general example

Sl 19  ZL \implies AC