The exam will cover all material taught from Chapters 3 and 4.

You should know the following definitions. If a definition is not here, it does **not** mean that it will not be on the midterm.

- An open set.

- A closed set.

- A limit point of a set.

- An isolated point of a set.

- An $\epsilon$ neighbourhood.

- A compact set (both my definition and the text's).

- The Heine Borel property of a set.

- $\lim_{x \to c} f(x) = L$

- $\lim_{x \to c} f(x) = \infty$

- $f : A \to \mathbb{R}$ is continuous at $c \in A$.

- $f : A \to \mathbb{R}$ is uniformly continuous.

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You should be able to state the following

- The sequential characterization of closed sets. (Theorem 3.2.8, or its equivalent version replacing 'Cauchy' with 'convergent'.)

- The sequential characterization of functional limits. (Theorem 4.2.3)

- The sequential characterization of continuity. (Theorem 4.3.2 (iii))

- The Extreme Value Theorem

- The Intermediate Value Theorem

- A theorem that ensures that $f : A \to \mathbb{R}$ is uniformly continuous. There is a condition on $A$ that ensures this.