

## *Lecture 11: Planarity · 1MA020*

*Vilhelm Agdur*<sup>1</sup>

<sup>1</sup> [vilhelm.agdur@math.uu.se](mailto:vilhelm.agdur@math.uu.se)

*20 November 2023*

We study the notion of a graph being *planar*, define its *planar dual*, and prove some results about when a graph is planar. We give most of a proof of the theorems of Kuratowski and Wagner about forbidden minors for planar graphs. Finally, we introduce the notion of outerplanar graphs.

*Exercises*