

## *Graph Theory with an introduction to Algebraic Graph Theory*

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Firstly, we shall start with an introduction to the main topics in Graph Theory with special emphasis in connectivity, colorability and planarity. Then, we shall continue with the firsts concepts in Algebraic Graph Theory. Algebraic Graph Theory uses algebraic techniques to study properties of graphs. We shall see several examples of those techniques, covering, for instance the fundamental group of a graph, several polynomials associated to graphs, and the spectra of a graph. seeing how those algebraic tools provide information about the properties of the graph.