Teoría algebraica de gráficas

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https://alfaromontufar.github.io/agt.html

"The mathematician's patterns, like the painter's or the poet's must be beautiful;
the ideas, like the colors or the words must fit together in a harmonious way.
Beauty is the first test: there is no permanent place in this world for ugly mathematics"
G.H. Hardy

Contenido de la materia:

1. Gráficas, matrices y polinomios
   (a) matriz de incidencia
   (b) matriz de adyacencia
   (c) matriz Laplaciana
   (d) matriz de distancia
   (e) polinomio de Tutte
   (f) polinomio cromático
2. Espectro
   (a) matriz de adyacencia
   (b) matriz Laplaciana
   (c) matriz de distancia
3. Grupos
   (a) automorfismos
   (b) grupos de pilas de arena

Referencias:

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3. Norman Biggs. Algebraic graph theory. Cambridge Mathematical Library. Cambridge University Press, Cambridge, second edition, 1993.
4. Andries E. Brouwer and Willem H. Haemers. Spectra of graphs. Universitext. Springer, New York, 2012.
5. Dragoš Cvetkovi'c, Peter Rowlinson, and Slobodan Simi'c. An introduction to the theory of graph spectra, volume 75 of London Mathematical Society Student Texts. Cambridge University Press, Cambridge, 2010.
6. Chris Godsil and Gordon Royle. Algebraic graph theory, volume 207 of Graduate Texts in Mathematics. Springer-Verlag, New York, 2001.
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Software:

Usaremos SageMath a través de la aplicación web SageMathCell.