# INTRODUCTION TO GRAPH THEORY

**Ch.4** Networks and flows (10 pages)

   1. Legal flows & capacities of cuts
   2. The Ford-Fulkerson Algorithm & Maxflow-Mincut theorem

**Ch.5** Edge and Vertex traversal problems (12 pages)

   1. Euler circuits & Euler trails
   2. Fleury's algorithm & the Chinese Postman problem
   3. Hamilton cycles & the Travelling Salesman problem.

**Ch.6** Planar embeddings of graphs (19 pages)

   1. Basic properties of planar graphs
   2. Kuratowski's theorem & non-planar graphs
   3. The DMP planarity algorithm
   4. Polyhedral graphs & the geometric dual

**Ch.7** Colorings & Matchings in graphs (12 pages)

   1. Legal colorings & k-colorable graphs
   2. Chromatic Polynomial & Four-color theorem
   3. Matchings in graphs & Stable marriage algorithm

**Ch.8** Infinite graphs & digraphs (not for the FIU course)