DYNAMIC GRAPHS

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The first day, the focus is on dynamic connectivity with good amortized bounds. I'll specifically cover [13, 10, 11] and discuss or review ET-trees [8] and refer to link-cut trees and union-find, discussed in [5]. The second lecture, I'll talk about connectivity with good worst case bounds. I'll cover [1, 9, 15]. The third lecture, I'll discuss techniques in directed graph problems, focusing on variations and uses of the Even-Shiloach trees in decremental strongly connected components [27], decremental transitive closure and decremental approximate shortest paths [6, 27], randomly selected nodes on long paths, the "historical paths" method for exact all-pairs shortest paths of [23], and the simple method of counting [2]. The last lecture will cover lower bounds, chiefly [14, 21]. A very good source of materials is Erik Demaine's website for his course in fall 2012 at MIT. Below are a superset of the papers I'll be talking about.

References

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