Complex Networks
Final exam topics 2026

1. **Basic network models**: Erdős-Rényi graph, statistical equivalence of both versions, degree distribution, clustering coefficient, assortativity, distance, percolation, small word, Milgram experiment, Watts-Strogratz model.

2. **Scale-freeness**: Power law distributions, divergence of moments, Pareto principle, Zipf's law, Barabási-Albert model, degree distribution, clustering, variants

3. **Robustness**: Errors vs. attacks, link removal percolation, centralities (distance, degree and path based ones), threshold models, Watt's model, cascades

4. **Diffusion and spreading**: Random walk on graphs, stationary distribution, SIS model on graphs, epidemic threshold, mean field methods

5. **Communities**: Stochastic Block Model, inference, community types, Modularity, similarity measures, community detection methods categories and algorithms, other mesoscopic structures, Core-periphery, hierarchical organization