The course focuses on the study of complex networks. The instructor is Professor Shimkin N, and the course is conducted in Hebrew. Scheduled times are 17:30-15:30. Recommended readings are:


Additional references include:

- Papers from the current literature.

The grading is based on 40% written work, 20% presentation, 40% seminar work.
Course Outline:

1. **Introduction to Reinforcement Learning.** (2 hours).
2. **Dynamic Programming** (6 hours):
   - Markov Decision Processes (MDPs)
   - Finite and infinite horizon and horizon problems
   - Value iteration, policy iteration, linear programming.
   - On-line planning (preview)
3. **Basic Reinforcement Learning Algorithms** (4 hours):
   - Monte Carlo methods
   - TD(λ) and SARSA
   - Q-learning
4. **Convergence analysis** (4 hours)
   - The Stochastic Approximations algorithm
   - Application to TD(0) and Q-learning
5. **Efficient Exploration** (4 hours)
   - Multit-armed bandits
   - Efficient exploration algorithms for MDPs
6. **Value Function Approximations** (4 hours)
   - Value function approximations: linear and nonlinear
   - LSTD
   - Actor-Critic algorithms.
7. **Policy Gradient Methods** (2 hours)
8. **Applications** (2 hours, + reading)