THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Reinforcement Learning

ECE 7202

Credit Hours:
3.00 - 3.00

Course Levels:
Graduate (5000-8000 level)

Course Components:
Lecture

Course Description:
Fundamentals of Markov decision processes and reinforcement learning algorithms.

Prerequisites and Co-requisites:
Prereq: Grad standing in Engineering or Math.

Course Goals / Objectives:
- Familiarize students with the framework of Markov decision processes
- Introduce students to different classes of reinforcement learning algorithms
- Help students gain experience in programming RL algorithms
- Guide students through identifying research problems that can be addressed using RL methods

Course Topics:
- Introduction to RL and applications
- Sequential decision making and multi-armed bandits
- Markov decision processes
- Exact dynamic programming, value/policy iteration
- Reinforcement learning algorithms (including Monte Carlo and TD methods, Q-learning, policy gradient, actor-critic)
- Selected advanced topics: multi-agent RL, inverse RL, on-policy vs off-policy, imitation learning, e

Designation:
Elective