# CSE422 Lecture Plan

| | Topic | No. of Classes | Content | Slide Link |
|---|---|---|---|---|
| **Before Midterm** | Introduction | 1 | Brief history, Turing test, Rational vs Human behavior, AI agents | https://docs.google.com/presentation/d/1Q0vFcuQqKyfT8GUOQaY7Azx_ipo_txAw/edit?usp=sharing&ouid=107280348520227181657&rtpof=true&sd=true |
| | Informed Search | 2/3 | Role of search algorithms in AI, State space, Heuristic formation, Greedy best-first search, A* search, Heuristic admissibility and consistency, Heuristic dominance | https://docs.google.com/presentation/d/1_feMaGYPXmDWy_t_KOlviU2lnpWsDFt-/edit?usp=sharing&ouid=107280348520227181657&rtpof=true&sd=true |
| | Local Search | 2 | Hill climb algorithm, Issues with hill climb algorithm, Remedies of the issues, Simulated annealing. Gradient descent intro | https://docs.google.com/presentation/d/1x6TeSbOLHzfZ_TPMXTxn_dsm4wVkS2lB/edit?usp=sharing&ouid=107280348520227181657&rtpof=true&sd=true |
| | Genetic Algorithm | 2 | Solving n-queen problems using basic genetic algorithm, Knapsack and traveling salesman problem solving using genetic algorithm (For practice) | https://docs.google.com/presentation/d/1ICqmQwBFAMF_trZDA0eEuPUazl33G3V9/edit?usp=sharing&ouid=107280348520227181657&rtpof=true&sd=true |
| | Games | 2 | 2-player game tree formation, Minimax, alpha-beta pruning | https://docs.google.com/presentation/d/1th8eUbrg2fKKXQe_19zGbEoGBy7Tt_AC/edit?usp=sharing&ouid=107280348520227181657&rtpof=true&sd=true |

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| **After Midterm** | Probability Theory | 2 | Probability intro, solving problems from joint probability distribution table, Checking independence and conditional independence, | https://docs.google.com/presentation/d/1bIxgnpulcW060aRy5-S9ZPx0UFyMOmlq/edit?usp=sharing&ouid=107280348520227181657&rtpof=true&sd=true |
| | Naive Bayes | 2 | Bayes theorem, Learning phase in naive Bayes, classification using naive Bayes | https://drive.google.com/file/d/13ytLfaOY8kWTgmcBM65mDtd2BkcYP5PK/view?usp=sharing |
| | Regression Analysis | 2 | Basics of supervised learning. Basics of gradient descent, basic steps of gradient descent in linear regression | *https://drive.google.com/file/d/12iV7z5HeDLyw50B88vpjjyekrmFV2n45/view?usp=sharing* |
| | Artificial Neural Networks | 2 | Perceptron architecture, Gradient descent, Hyperparameter selection, Intro to variants of neural networks | https://docs.google.com/presentation/d/1l9DXxLPu84vVQZmRRhgdLquQKYV4d3Jq/edit?usp=sharing&ouid=107280348520227181657&rtpof=true&sd=true |
| | Decision Tree | 2 | | https://docs.google.com/presentation/d/1bBdf_knHdGFl6fItkiZVhQO1B5faY93v/edit?usp=sharing&ouid=107280348520227181657&rtpof=true&sd=true |