

Programming Assignments: Overview

Intelligent Agents – Fall 2025

You will complete **five programming assignments (PAs)** in this course. Each PA is worth **5% of your grade** (25% total). They are designed to give you practical experience implementing the algorithms we study.

Workflow

1. Open the provided **Colab notebook** (link will be posted on Canvas).
2. Save a personal copy to your Google Drive.
3. Complete the TODO sections in Python.
4. Run the provided **public tests** to check your work.
5. Write a short **methods note** (150–250 words) reflecting on results.
6. Submit your `.ipynb` notebook file on Canvas.

Grading

- **Functionality (80%)** – Passing public and hidden test cases.
- **Methods Note (15%)** – Clear, thoughtful reflection on results.
- **Code Quality (5%)** – Readable, documented, no hard-coding.

Late Policy

- You receive **3 slip days** total across all PAs.
- Slip days are used automatically for late work (max 2 per assignment).
- After slip days, –10% per day for up to 3 days.

Topics & Timeline

- **PA1 (Week 2): Normal-Form Games**
Compute payoffs and best responses; implement a simple equilibrium checker.
- **PA2 (Week 4): Regret Minimization**
Implement regret matching and RM+; analyze convergence in Rock–Paper–Scissors.
- **PA3 (Week 7): Counterfactual Regret Minimization**
Apply CFR to Kuhn poker; measure exploitability as training progresses.
- **Midterm (Week 7)**

- **PA4 (Week 10): Abstraction**
Implement a simple action abstraction; evaluate its impact on performance.
- **PA5 (Week 12): Opponent Exploitation**
Compute best responses and safe best responses from opponent play logs.
- **Final Project Deliverables (Weeks 6, 11, 14)**

Tools & Help

- **Python/Colab:** All work is done in Google Colab (no installation required).
- **Tests:** Public tests help you self-check; hidden tests ensure full correctness.
- **Support:** Ask questions in office hours, via Canvas discussions, or by email.