Course Description

Chess is a 2-player strategy board game that is believed to have originated from India during the 7th century. It made its way around to Europe eventually and by 16th century, the same standard rules that are used to play today was being used around the world to play. As a result, there is an enormous volume of literature dedicated to chess theory by scholars through the ages. To this day, chess is being played by hundreds of millions of people around the world.

This course teaches the basics of chess and allows students to take a peek at this part of the world that many people don’t get to see. All that is needed from the students is active participation and interest!

This course is a 3-unit course that lasts for 14 weeks of the full semester. Classes are held once a week for 50 minutes.

Required Materials

- Chess 101 by Dave Schloss

Prerequisites/Corequisites

None

Course Objectives

Successful students will learn:

1. The rules of chess
2. Basic strategy and tactics
3. Algebraic notations for chess
4. History of chess
5. Computational analysis of chess

Course Structure

Lecture
There will be classes every Sunday at 6pm for 50 minutes. During the class there could be a lecture on theoretical material, although most classes will involve a segment for practicing playing the game.

0.1 Homework
Most of the homework would involve playing games of chess outside the classroom physically as well as online. Some homework may involve researching online. Others will involve using computational tools to analyze games you have played as well famous games.

Mid-term
There will be a written mid-term test that evaluates your understanding of the course material. It would test each of the learning objectives of the course:

1. Knowledge of notation (like circle "e3" or list the squares the knight could move to, etc.)
2. Application of tactics on given board positions (what’s the best move to play here?)
3. Knowledge of one well known fact about a famous player in history (Where is Bobby Fisher from?)

Final Exam
The final would be a chess game against the instructor. The instructor would set up positions where the tactics you learned could be played. Furthermore, you would need to record down the moves of the game as if it were a tournament game. You would then go on to import the game into computational tools of your choice to analyze the game you just played and submit three moves you could have improved on and why it would have been better. This would test most of the learning objectives. The criteria for grading would be correctness of analysis.
Grading Policy

You will receive either a Pass or No-credit at the end of this course.

- **20%** of your grade will be determined by class participation.
- **30%** of your grade will be determined by homework
- **25%** of your grade will be determined by mid-term.
- **25%** of your grade will be determined by the final exam.
Course Policies

During Class
Computers are allowed for course-use purposes, such as performing computational analysis of games.

Attendance Policy
Attendance is expected in all lectures. Valid excuses for absence will be accepted before class. For every class missed the participation grade will be dropped 2 points.

Policies on Late Assignments
Late assignments will be accepted for no penalty if a valid excuse is communicated to the instructor before the deadline. After the deadline, assignments will be accepted for a 50% deduction to the score up to 2 days after the deadline. After this any assignments handed in will be given 0.

Academic Integrity and Honesty
Students are required to comply with the university policy on academic integrity found at cmu.edu

Accommodations for Disabilities
standard text.
Schedule and weekly learning goals

The schedule is tentative and subject to change. The learning goals below should be viewed as the key concepts you should grasp after each week.

Week 01: Basic rules of chess, 01/13 - 01/17:
- How do the pieces move?
- What is the objective of the game?
- How to use the clock
- Terminologies

Week 02: Advanced Rules, 01/20 - 01/24:
- Castling
- En Passant capture
- Pawn promotion
- Stalemate
- Touch-rule

Week 03: Basic middle-game strategies, 01/27 - 01/31:
- Forking
- Pinning
- Discovered Attack
- X-rays

Week 04: Endgame Theory, 02/03 - 02/07:
- 2 Rooks checkmate
- Queen + King checkmate
- One rook checkmate
- Mating patterns
- Zugzwang

Week 05: Opening Ideas, 02/10 - 02/14:
- Middle pawn openings (why?)
- Developing pieces (why?)
- Castling early
- Activating the rooks (where?)

Week 06: Algebraic notations, 02/17 - 02/21:
- How moves are written for communication

Week 07: Review of Theory, 02/24 - 02/28:
- Everything learnt thus far

Week 08: Midterm, 03/03 - 03/07:
- Tests everything learnt so far

Week 09: Spring Break, 03/10 - 03/14:
Week 10: History of Chess, 03/17 - 03/21:
- Famous players through the ages
- Immortal games of grandmasters

Week 11: Computational analysis of chess, 03/24 - 03/28:
- Use of Lichess to analyze games

Week 12: Computational Theory behind chess, 03/31 - 04/04:
- How do computers analyze games for us?
- Alpha-Zero vs Stockfish

Week 13: Review, 04/07 - 04/11:
- Review of everything learned so far

Week 14: Final Exam, 04/14 - 04/18:
- As described in previous section