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Algorithmic Game Theory CS280
Website: https://panageas.github.io/agt2023/

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Instructor: Ioannis Panageas, Office: DBH 4072, Email: ipanagea@ics.uci.edu

Office Hours: By appointment.

Textbook: Nisan/Roughgarden/Tardos/Vazirani (eds), Algorithmic Game Theory (online).
Recommended: Tim Roughgarden notes.
Remark: Some lectures are not part of the book.

Prerequisites: Introductory undergrad courses* in Algorithms, Analysis and Discrete Math.

Course Description: We will cover topics at the interface of theoretical computer science and economics. Introduction to zero-sum games and LP duality, mechanism design, voting and impossibility theorems, "price of anarchy" and various applications. Moreover, we will talk about Algorithms and complexity theory for learning and computing Nash equilibria.

Grading Policy:

- **Scribing lecture notes (25%)**: Deadline is 3 weeks after the lectures using a **Latex** template. Possible to work in groups.

- **2 Homeworks (40%)**: Two homeworks will be given. You must use **Latex** for your answers (provide a pdf file). Each student has to work individually.

- **Research Project or presenting a paper (35%)**: Write a report in **Latex**. Research projects will be available during the third week of the lectures. Possible to work in groups.

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*Basic knowledge.