

Further Topics in Statistics and Probabilities

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Please check this page regularly as new information about homework assignments will be published here in the course of the semester.

Group 1 (Collège d'Économie):

Thursday, 18h–19h30, Centre Assas, room 505, and
Friday, 12h–13h30, Centre Assas, room 314.

Group 2 (CMI EFiQuaS):

Thursday, 15h30–17h00 and
Friday, 14h–15h30, salle Europe, ISIT, 39 bis rue d'Assas.

Classes start in the second week of the semester, that is, the week of October 3rd. In exchange, there are no meetings of this class in the week of November 7th.

In this class, we are going to review the fundamental concepts of probability theory and apply them to problems in mathematical economics. We are going to discuss in particular models of interactive knowledge and belief revision as they have been introduced by Robert Aumann's 1976 article "Agreeing to disagree."

For our meetings please bring:

- Your notes from your statistics classes (second semester of last year and your current cours magistral) as well as any other books or lectures notes. You are allowed and encouraged to use this material for group works in class.

Evaluation for this class (2 ECTS) is based on:

- your participation during the sessions, including group works, presentations, and solutions of written assignments, and
- your term paper.

Program

Session 1: Modeling information and beliefs about events (Aumann's 1976 model) as a door into the fundamental concepts of probability theory (probability spaces, σ -algebras, random variables, Bayes' Law).

Session 2: Continued.

Session 3: Aumann's (1976) result on common knowledge and agreement

Session 4: Continued.

Session 5: Bayesian Dialogues

Session 6: Summary and conclusions.

Session 7: Students' presentations.

Session 8: Students' presentations.

Session 9: Students' presentations.

Session 10: Students' presentations.

References

- [1] Aumann, Robert J. 1976. "Agreeing to Disagree." *The Annals of Statistics* 4, 1236–1239.
- [2] Geanakoplos, John and Herakles Polemarchakis. 1982. "We can't disagree forever." *Journal of Economic Theory* 28, 192–200.
- [3] Sebenius, James K. and John Geanakoplos. 1983. "Don't bet on it : contingent agreements with asymmetric information." *Journal of the American Statistical Association* 78 (382), 424–426.
- [4] Savage, L. 1954. *The Foundations of Statistics*. New York: Wiley.
- [5] Pawlowitsch, C. 2020. *Dialogues Aumanniens*. Working Paper.
- [6] Williams, David. 1991. *Probability with Martingales*. Cambridge, UK: Cambridge University Press.