

In order to follow the course, the student should be able to speak two languages: English (a natural language) and mathematics (a formal language). It is not necessary to speak these languages fluently. Some accent is no problem (some of your three teachers also may have it).

The level of mathematics of the text book of Jehle and Reny is reflected by its mathematical appendix. Inspecting this appendix makes clear that it concerns quite high level mathematics. It is a good idea to study this appendix and to make some of the exercises there. Especially in the part taught by Dusan Drabik there will be special attention for this appendix. Not the whole appendix is relevant. The following list of notions and theorems that are especially important may be helpful.

1. Binary relation.
2. Open set, closed set, compact set, bounded set.
3. Continuous function, differentiable function.
4. Partial derivative.
5. Strictly increasing function, strongly increasing function.
6. Convex set.
7. Concave function, quasi-concave function, strictly concave function, strictly quasi-concave function.
8. Positive definite matrix, positive semi definite matrix.
9. Homogeneous function.
10. Fixed point of a mapping.
11. Weierstrass' Theorem (about existence of minimisers and maximiser).
12. Brouwer's Fixed-point Theorem (about existence of fixed points).
13. Young's Theorem (about equality of second order partial derivatives)
14. Euler's Theorem (for homogeneous functions).
15. Lagrange's Theorem (to solve a constrained optimisation problem).
16. Envelope Theorem (about interpretation of Lagrange multipliers).

Concerning this mathematics it is good to know that students should be familiar with the above notions and theorems, especially in applying them. In general mathematical details will be skipped in the course. Also for the exam and exercises the very details are not important.