

Decision Theory and Risk

Beslutsteori och risk
7.5 credits

Single subject course

721A89

Valid from: 2025 Autumn semester

Determined by Chairman of the Course and Programme Syllabus Board at the Faculty of Arts and Sciences	Main field of study Applied Ethics	
Date determined 2024-12-18	Course level Second cycle	Progressive specialisation A1N
Revised by	Disciplinary domain Social sciences	
Revision date	Subject group Philosophy	
Offered first time Autumn semester 2025	Offered for the last time	
Department Institutionen för kultur och samhälle	Replaced by	

Entry requirements

- 180 ECTS credits passed including 90 ECTS credits in a main field of study.
- English corresponding to the level of English in Swedish upper secondary education (Engelska 6 or Engelska nivå 2).
Exemption from Swedish

Intended learning outcomes

On completion of the course, the students should on an advanced level be able to:

- describe and analyse concepts, theories, and issues within the field of decision theory
- apply concepts and perspectives used in decision theory as practiced in various disciplines
- discuss the differences between a normative and a descriptive perspective in decision theory
- critically discuss how decision-theoretical tools can be used outside academic contexts
- discuss how different perspectives on risk management can be weighed and compared
- critically explain different positions and arguments within decision theory and risks

Course content

The course begins with a general overview of classical decision theory, then moves on to more specific questions and various developments or alternatives to this classical theory.

The course addresses decision theory both in terms of the empirical study of how people actually make decisions and how decisions should be made. Factors considered in decision-making and how these factors should be weighed together are discussed. The classical starting point that decisions are about maximizing expected value, where the expected value is a product of an outcome's probability and its value, as well as how alternative perspectives have developed over the past decades, is covered in the course.

The course also addresses questions about risk and how risks should be managed in modern societies. Risk assessment is often a subject for experts, but risk management involves a combination of both normative and descriptive elements, which means that tools from decision theory are applicable.

Topics and issues covered in the course include:

- expected utility theory
- decisions under risk and decisions under uncertainty
- behavioral decision theory, including theories of heuristics and biases
- prospect theory
- alternatives to classical decision theory
- risks and how they should be managed
- the precautionary principle
- group decisions
- voting mechanisms
- Arrow's impossibility theorem

Teaching and working methods

The course includes lectures, group discussions, seminars, and workshops. In addition, the student is expected to engage in self-study.

Language of instruction and examination: English.

Examination

The course is examined through:

- active participation in seminars, scale: UG
- individual written assignment, scale: EC

To get Pass (E) as the final grade, at least an E is required on the individual written assignment and a Pass on the other components. Higher grades are based on the individual written assignment.

Detailed information can be found in the course's study guide.

If special circumstances prevail, and if it is possible with consideration of the nature of the compulsory component, the examiner may decide to replace the compulsory component with another equivalent component.

If the LiU coordinator for students with disabilities has granted a student the right to an adapted examination for a written examination in an examination hall, the student has the right to it.

If the coordinator has recommended for the student an adapted examination or alternative form of examination, the examiner may grant this if the examiner assesses that it is possible, based on consideration of the course objectives.

An examiner may also decide that an adapted examination or alternative form of examination if the examiner assessed that special circumstances prevail, and the examiner assesses that it is possible while maintaining the objectives of the course.

Students failing an exam covering either the entire course or part of the course twice are entitled to have a new examiner appointed for the reexamination.

Students who have passed an examination may not retake it in order to improve their grades.

Grades

ECTS, EC

Other information

Planning and implementation of a course must take its starting point in the wording of the syllabus. The course evaluation included in each course must therefore take up the question how well the course agrees with the syllabus.

The course is conducted in such a way that there are equal opportunities with regard to sex, transgender identity or expression, ethnicity, religion or other belief, disability, sexual orientation and age.

If special circumstances prevail, the vice-chancellor may in a special decision specify the preconditions for temporary deviations from this course syllabus, and delegate the right to take such decisions.

About teaching and examination language

The teaching language is presented in the Overview tab for each course. The examination language relates to the teaching language as follows:

- If teaching language is “Swedish”, the course as a whole could be given in Swedish, or partly, or as a whole, in English. Examination language is Swedish, but parts of the examination can be in English.
- If teaching language is “English”, the course as a whole is taught in English. Examination language is English.
- If teaching language is “Swedish/English”, the course as a whole will be taught in English if students without prior knowledge of the Swedish language participate. Examination language is Swedish or English depending on teaching language.