



Winter Semester 2021/2022

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## **Interactive Case-Study Seminar: Fundamentals of Decision Theory**

(FallstudienSeminar in englischer Sprache)

(33030 – 2 SWS)

### **1. Course Description**

Decision theory is concerned with three domains of problems: how a decision-making agent should make the best possible decisions given uncertain and risky circumstances in the environment; how a decision-making agent should make the best possible decision when faced by other decision-making agents who may have contrary interests; and how a group of agents acting together in a committee should make the best possible decisions. During this course students will be introduced to the fundamental concepts and principles of decision theory, such as normal and extensive form games, solution concepts, and aggregation procedures. This is an innovative and interactive seminar course. The goal is to create a structured problem-solving ‘learning laboratory’ in which students develop their abilities to think in decision-theoretic terms when presented with practical real-world decision-making problems taken from professional and business experience. All theory will be embedded in case studies which will be used to contrast ‘intuitive’ approaches to decision-making problems with structured and systematic approaches.

### **2. Intended Learning Outcomes**

At the end of this seminar course students will have acquired

1. an understanding of the key concepts of classical decision theory, game theory, and collective choice,
2. a basic ability to systematically structure real-world problems within a decision-theoretic framework,
3. a basic ability to analyze a real-world problem with decision-theoretic solution concepts at an introductory level,
4. a basic ability to compare foundational decision-theoretic solutions with an intuitive approach to solving decision-making problems, and
5. an ability to communicate the results of a decision-theoretic analysis in a non-technical manner to a wider audience.

### **3. Pre-requisites**

None.

#### 4. Teaching and Learning Strategies / Seminar Programme

This is an intensive seminar course that will provide students with an introduction to the three main areas of decision theory:

1. Decisions under uncertainty and risk (classical decision theory)
2. Strategic decision-making (game theory)
3. Committee decision-making (collective choice)

Complementing the three lectures on these topics, students will define and solve a selection of case studies in working groups of 4 or 5, and present their analyses in class.

Course materials will be made available via dropbox or e-mail after each session.

#### 5. Seminar Course Schedule

The seminar course is provided via four evening sessions. These will take place as follows:

<i>Session No.</i>	<i>Day</i>	<i>Date</i>	<i>Time</i>	<i>Room</i>
01	Wednesday	27 Oct	18:00 – 22:00	via Zoom
02	Wednesday	17 Nov	18:00 – 22:00	via Zoom
03	Wednesday	24 Nov	18:00 – 22:00	via Zoom
04	Wednesday	19 Jan	18:00 – 22:00	via Zoom

#### 6. Assessment

Economics (BA) and IWE students & P&E (BA) students aiming for an accreditation under Module E6 (or Ö6 under the previous examination regulations) (5 CP):

- One-hour unseen written examination. If the total number of participating students for the written examination is less than five, an oral examination may replace the written one. (Students will be informed about the form of examination as soon as possible.)
- The date of the examination can be found on <https://www.bwl5.uni-bayreuth.de/de/studiendekan/Klausurtermine/>.
- Students have to register for the examination via CAMPUSonline. Only if students cannot register via CAMPUSonline they can register via e-mail by sending an e-mail to Manja Melcher: [manja.melcher@uni-bayreuth.de](mailto:manja.melcher@uni-bayreuth.de). This e-mail must only contain the title of the course, the student's surname, first name, ID number, and degree of study as well as a brief indication why registration via e-mail is required.
- The registration deadline is one week in advance to the date of the examination. Later registrations will not be accepted.

P&E (BA) Students aiming for an accreditation as a 'P4\*-Seminar' (or 'P3-Seminar under the previous examination regulations) (2 CP):

- Report based on a selected case study of the seminar course. Further information will be announced and published during the seminar.

P&E (BA) Students aiming for an accreditation as a 'P6.iv-Seminar' (5 CP) (or 'P3-Seminar' under the previous examination regulations (6 CP)):

- Seminar paper ('Hausarbeit') based on a case study. Further information will be announced and published during the seminar.

Furthermore, for passing the seminar course students are expected to participate in all seminar sessions.

## 7. Reading Resources

- Required pre-reading: none  
As the teaching and learning concept is based on structuring intuitive analyses no prior reading material will be distributed as this would interfere with the didactical concept.
- Recommended reading:  
Students will be given a list of recommended reading at the end of each of the seminar session. These reading resources will be available via dropbox or e-mail.

## 8. Accreditation

- Economics (BA):  
Modulbereich SQ: Schlüsselqualifikation / Modul SQ3: Fallstudienseminar in englischer Sprache
- IWE:  
Modulbereich SQ: Schlüsselqualifikation / Modul SQ2b: Fallstudienseminar
- P&E (BA):  
Modulbereich P: Philosophie / Modul P4\*: Grundlagen des Entscheidens II (Seminar)  
Modulbereich P: Philosophie / Modul P6.iv: Entscheidungstheorie (Seminar)  
Modulbereich E: Economics / Modul E6: Spezialisierung
- P&E (BA) (Previous examination regulations before Winter Semester 2015/2016):  
Modulbereich P: Philosophie / Modul P3: Grundlagen des Entscheidens II (Seminar)  
Modulbereich Ö: Ökonomie / Modul Ö6: Veranstaltungen eigener Wahl

## 9. Registration

There is joint registration procedure for all three case-study seminars in English language offered this winter semester:

- **30026 – Group I – Class Room Teaching**  
*Interactive Case Study Seminar: Introduction to Decision and Game Theory*  
(Jonathan Schiller)
- **30026 - Group II – Class Room Teaching**  
*Interactive Case Study Seminar: Introduction to Decision and Game Theory*  
(Jonathan Schiller)
- **33030 – Virtual via Zoom**  
*Interactive Case-Study Seminar: Fundamentals of Decision Theory*  
(Frank Steffen)

Further information on all seminars can be found under Teaching Winter Semester 2021/2022 on [www.governance.uni-bayreuth.de](http://www.governance.uni-bayreuth.de).

Students have to register via e-mail by sending an e-mail to johannes.hahn@uni-bayreuth.de until **Fri 22 October 2021**. To register the content of the e-mail should **exactly** follow the instructions as given. Those failing to do so **will not be registered**.

- **Subject line**

Fallstudienseminar in englischer Sprache

- **Content**

In the mail please give the following information in a comma-delimited list without any further details exactly as follows:

Last name,First name,Mat-Nr.,Degree,Semester,Seminar Preference

**Note:** No spaces between commas.

For the degree use the following coding:

Degree = Econ, IWE, P&E

Seminar Preference:

Students should use the above seminar numbers of the alternatives (30026-I, 30026-II, 33030) to order the seminars according to their preference. In case students would like to apply for one seminar or two seminars, only, they should use only one or two numbers, respectively. In case students are indifferent between seminars an '=' should be written between the corresponding numbers.

- **Examples**

Ricardo,David,1561,Econ,1,30026-I

Rawls,John,18752, IWE,2, 33030,30026-II

Mill,John,10101,P&E,35,30026-II=33030,30026-I

Smith,Adam,12501,Econ,3,30026-II

Allocation of seminar places will be made by **Sun 24 October 2021**. Students will be notified by e-mail.

**Note:** Given the nature of the seminar course priority in the allocation of places will be given to Economics students in the 1<sup>st</sup> and 2<sup>nd</sup> semester. The number of participants, which can be accepted for each seminar, is restricted to 20 students.

## 10. Responsible Student Assistants for this Seminar

All requests regarding this seminar should, in the first instance, be addressed to:

- Manja Melcher: manja.melcher@uni-bayreuth.de

**Document last revised:** 10 October 2021