SBWL Decision Sciences
Game Theory, Psychology, and Data

Univ.-Prof. Dr. Susann Fiedler

Institute for
Cognition and Behavior

http://www.wu.ac.at/cobe

cobe@wu.ac.at

Univ.-Prof. Dr. Ben Greiner

Institute for
Markets and Strategy

http://www.wu.ac.at/ims

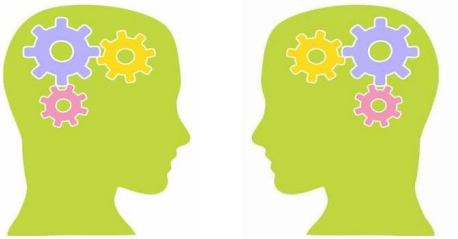
ims@wu.ac.at

What is Decision Sciences about?

- **The goal is to enable you to make strategic, well-informed, evidence-based managerial decisions.**

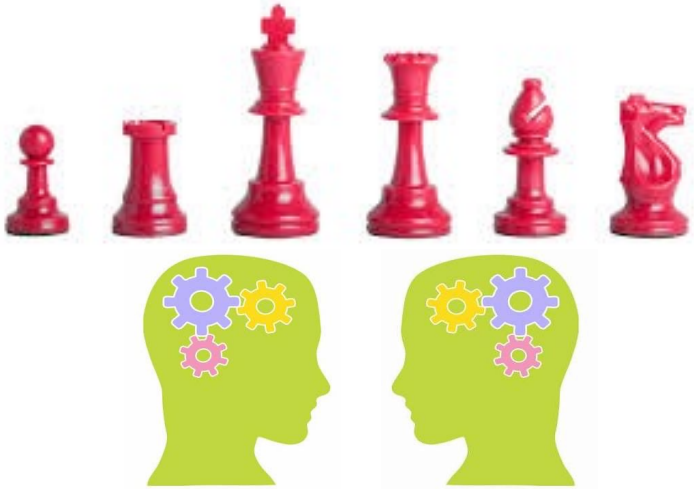
Game Theory

Psychology

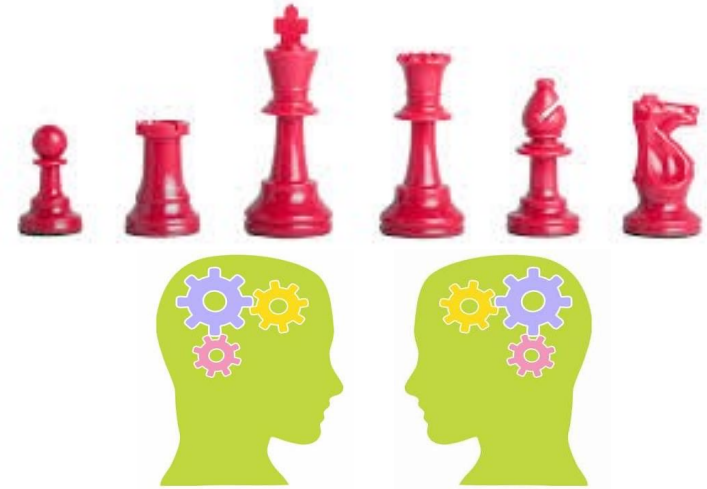


Data analysis

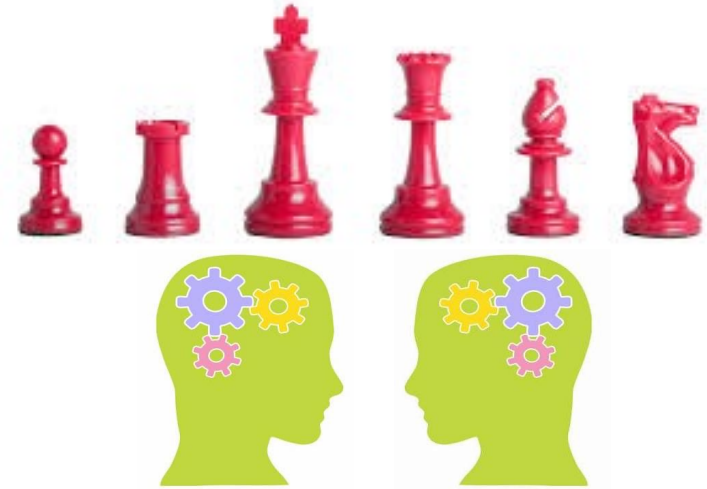
- The CEO of an internet auction platform asks: Should we charge a fee for higher “start prices”?



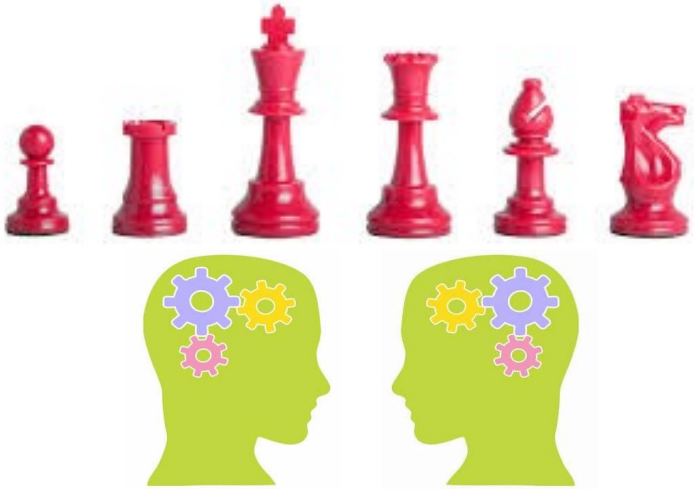
- You were just promoted to HR manager. The board asks: How should we design our bonus scheme?



- You are a strategy consultant, and a company asks: Should we pursue an aggressive pricing policy?



- Your boss asks you to prepare the agenda for a board meeting, and she wants her proposal to win. Which alternative proposals should be discussed, and in which order should they vote?



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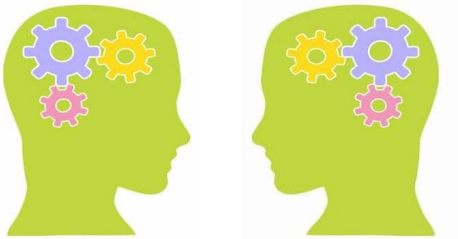
Game Theory

Psychology



Data analysis

How do we teach Decision Sciences?

Five courses

compulsory

choose 2 out of 3

All courses offered each semester

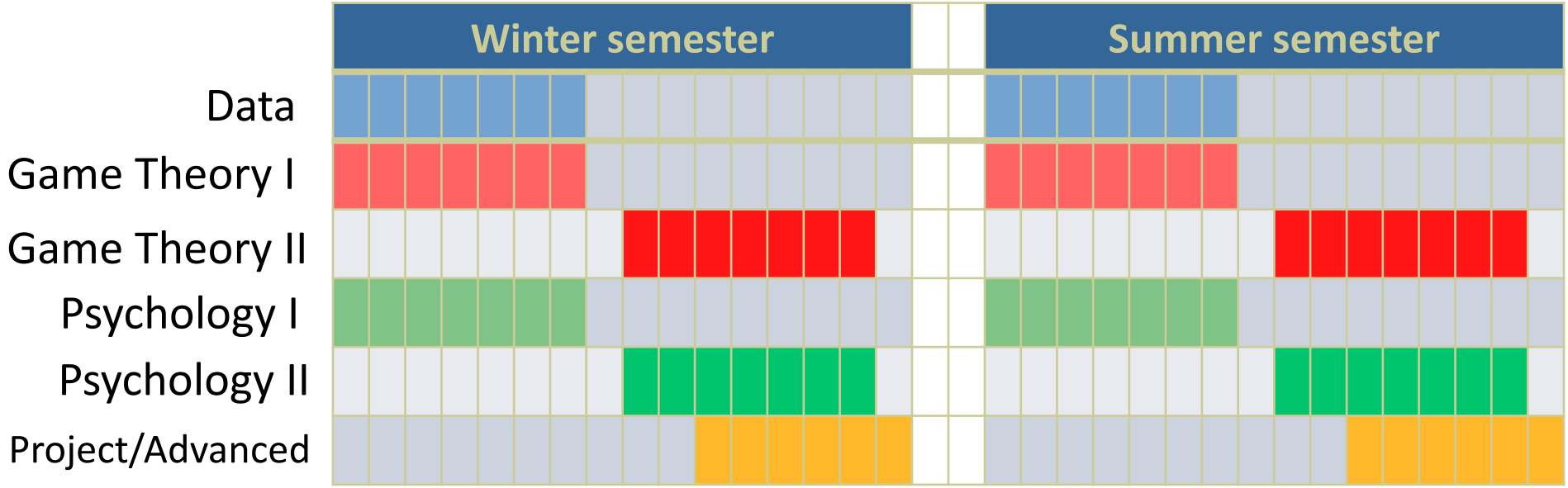
in 1st half of semester

in 2nd half of semester

Five courses

compulsory

choose 2 out of 3



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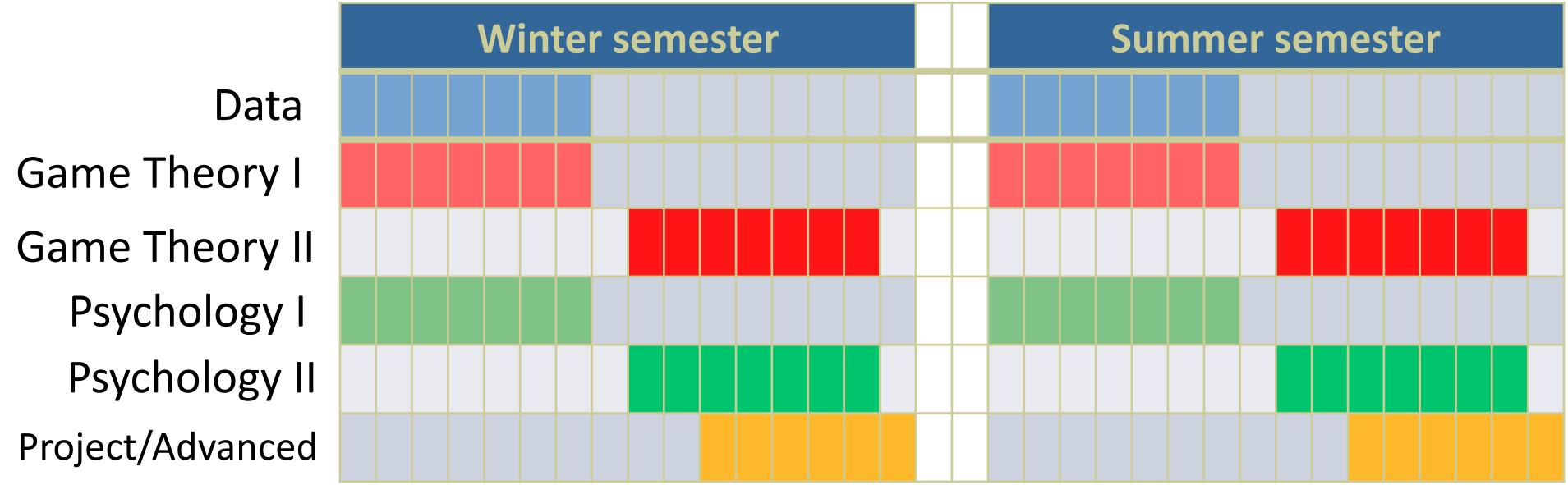

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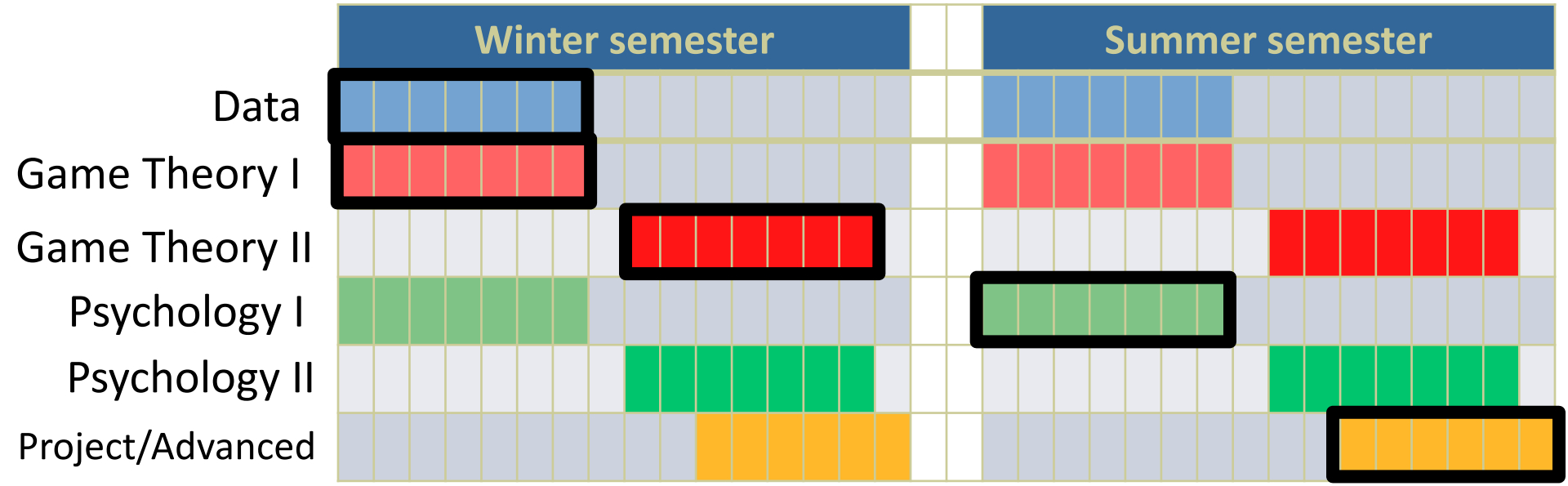

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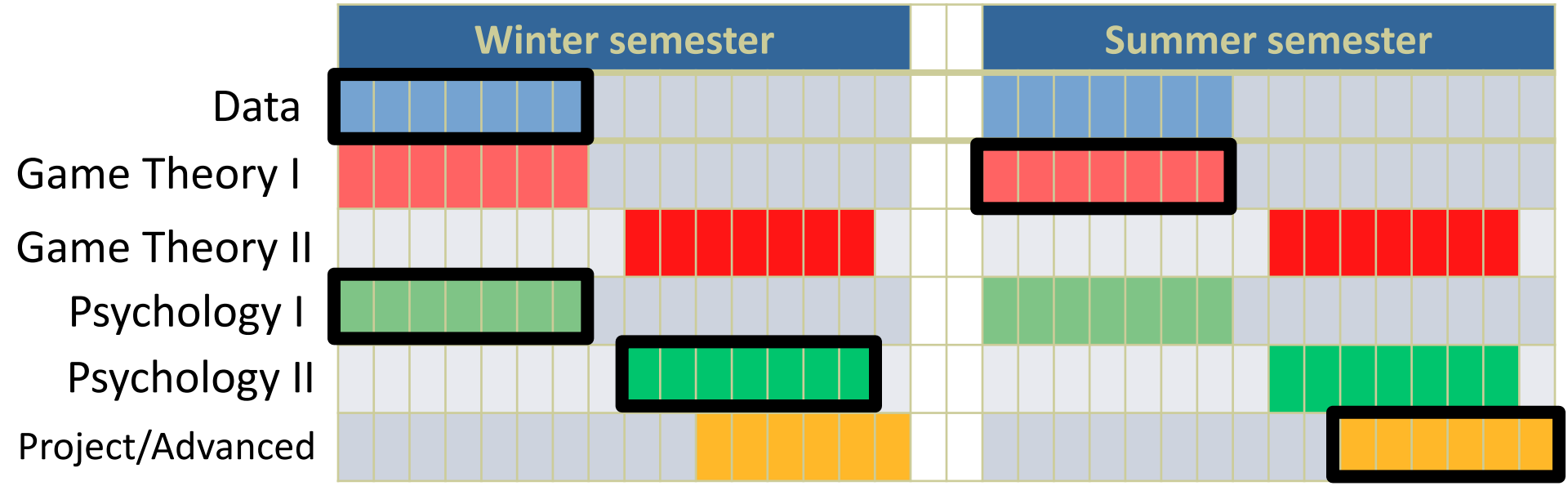

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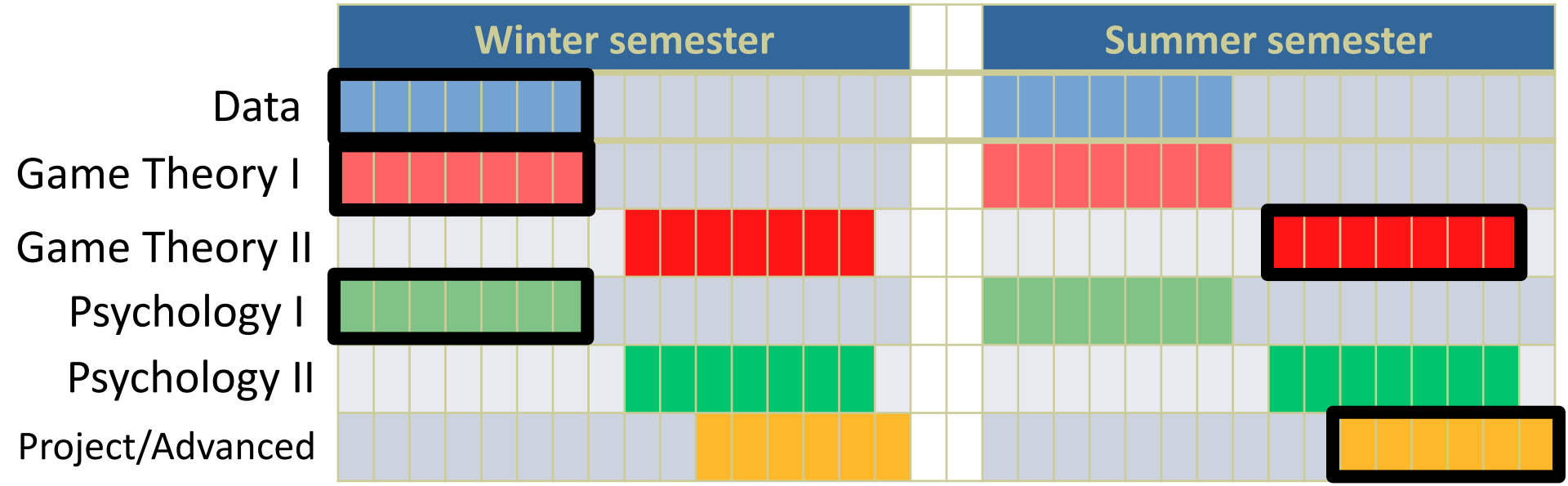

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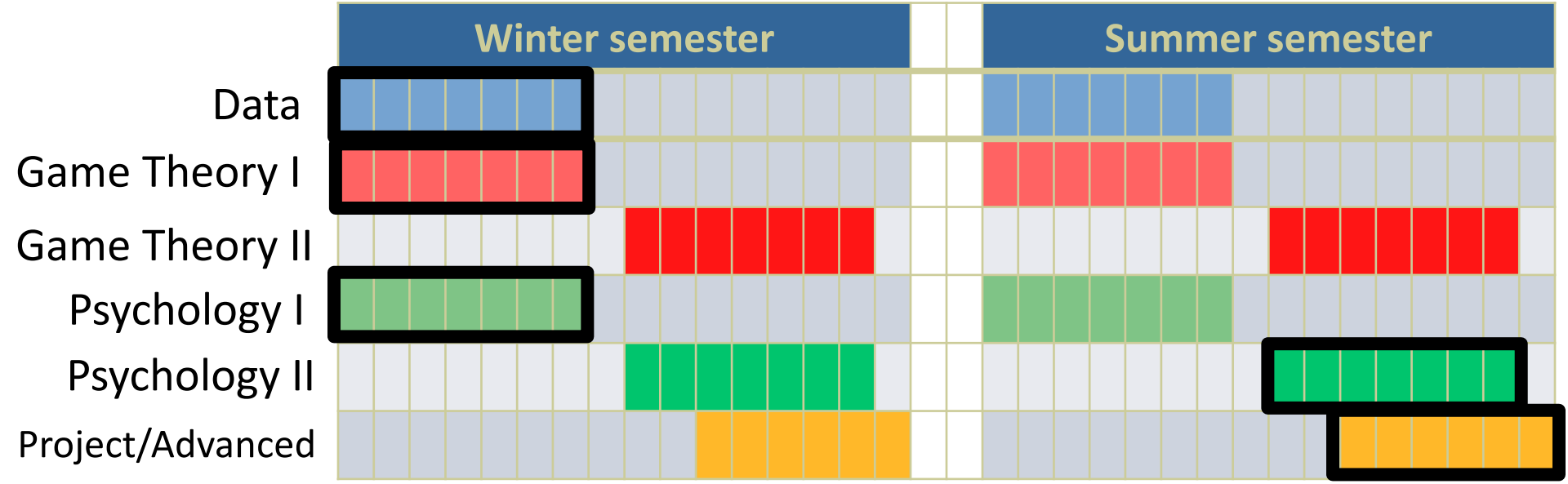

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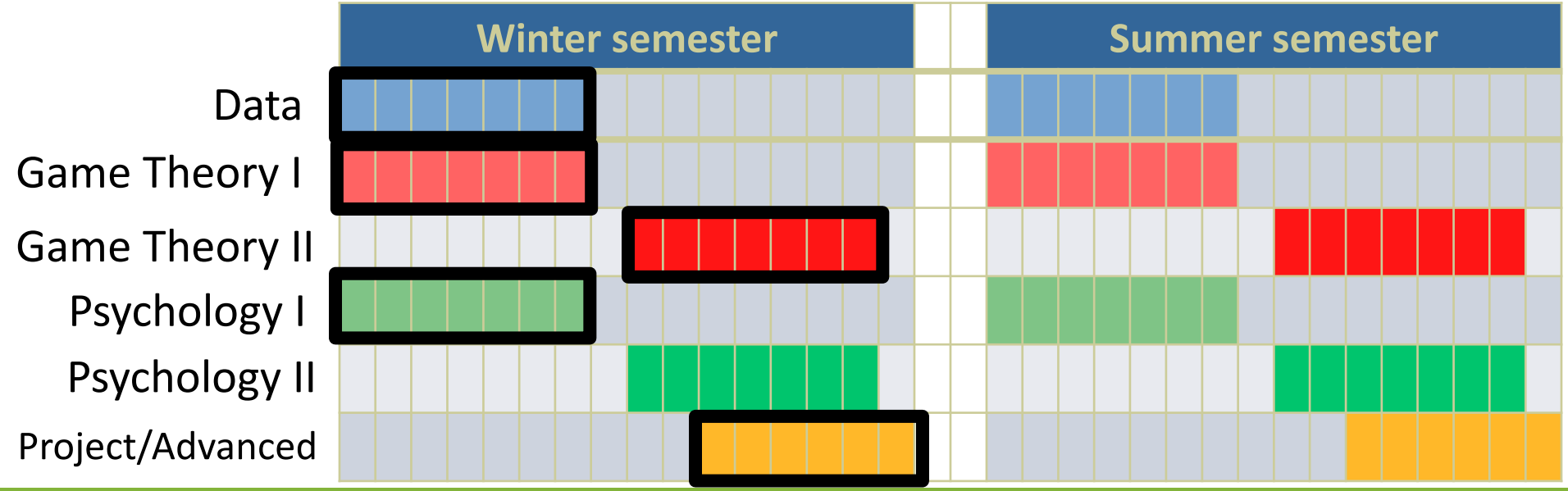

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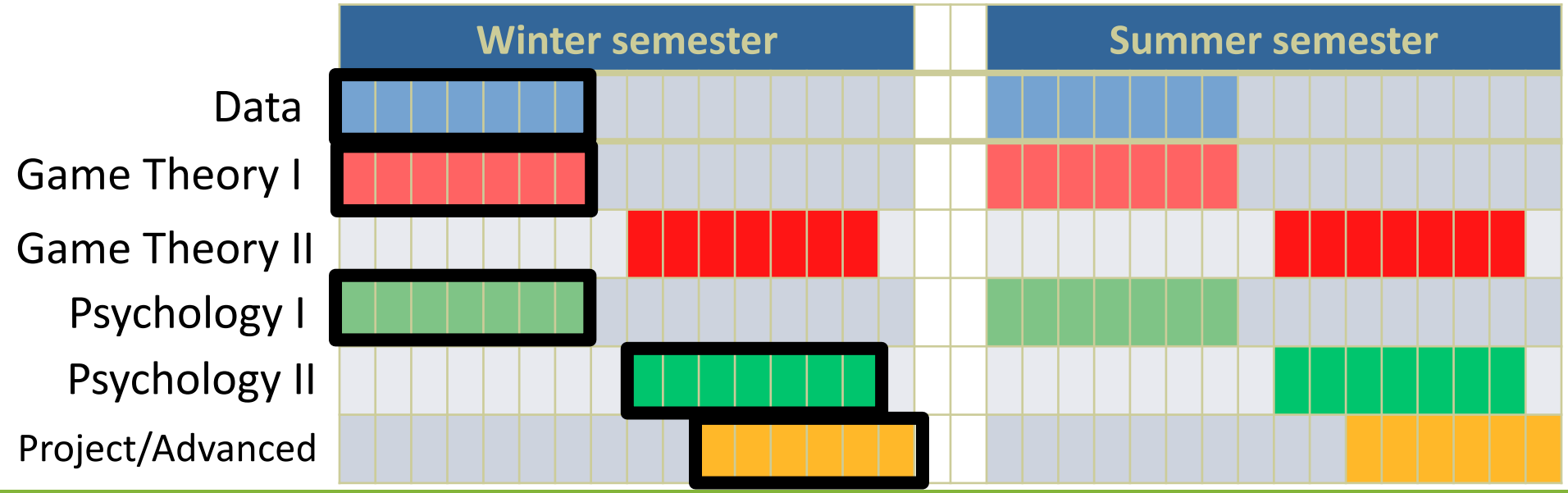

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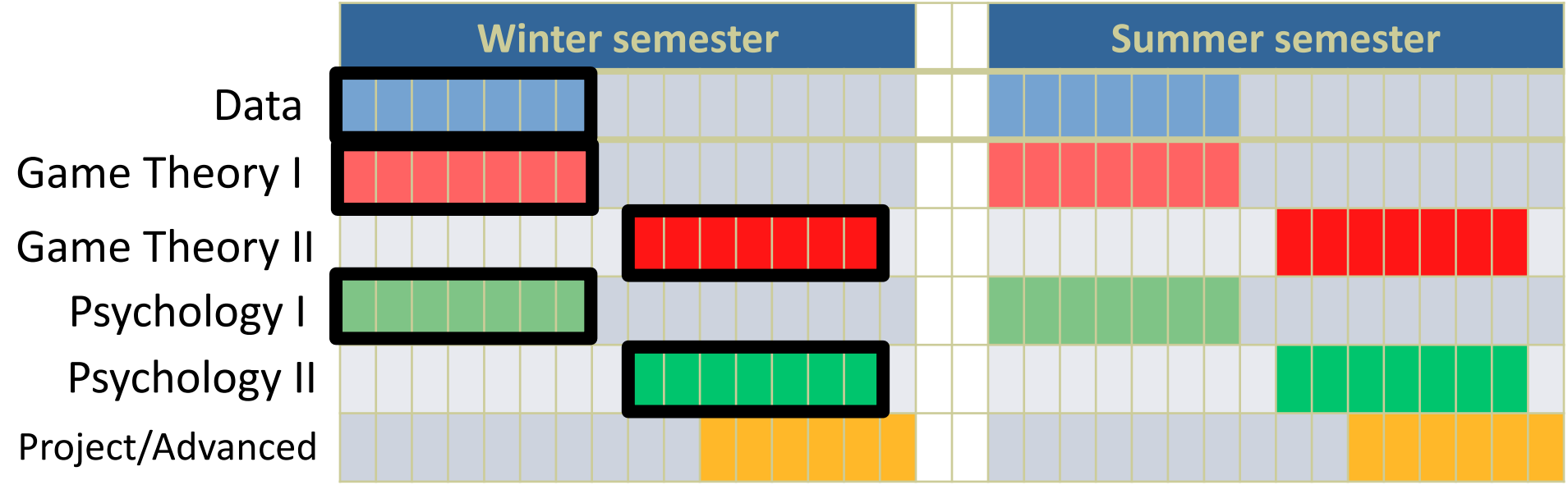


How do we teach game theory?

I.

- Basics of game theory
- Competition and collusion
- Market structure
- Timing and commitment
- Bargaining and negotiations
- Coordination problems
- Finite and infinite horizons

II.

- Advanced concepts of game theory
- Imperfect information
- Reputation
- All kinds of auctions
- Signaling and cheap talk
- Herding and information cascades

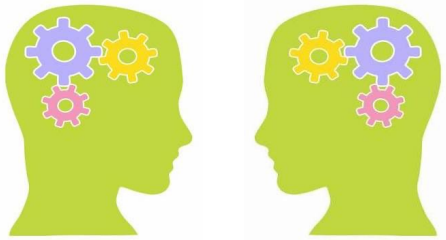
How do we teach game theory?

- **Decision experiments**
  - with business-like decision situations in last hour of class
- **Homework and self-learning**
  - (guided) **theoretical and data analysis** of the games played
- **Lectures and discussion**
  - interactive (cold-call-supported) in-depth discussion of the games and data
  - necessary theory and game-theoretic tools to fully understand these problems

How do we teach business psychology?

I.

- Motivation & incentives
- Attitudes
- Learning
- Reference points
- Choice & context
- Cognition
- Nudging
- Judgement & Decision-making
- Survey design & analysis



II.

- Leadership & Power
- Trust and cooperation
- Group structure & process
- Emotions/ actions/norms
- Interpersonal communication
- Conflict
- Change process

How do we teach business psychology?

- **Lecture**
  - Introduction of **basic concepts in psychology** with many examples from the organizational and managerial context
- **In class decision experiments & case studies**
  - Application of the introduced constructs & mechanisms
- **Take home quizzes**
  - Consolidation of the newly learned constructs

How do we teach data analysis?

Simple regression

Causality in field data

Advanced regression analysis

Experiments

Difference-in-difference

Regression discontinuities

How do we teach data analysis?

- **Lecture**
  - Introduction of **analysis methods** with many examples and Stata code
- **Application**
  - **Use** statistics software, **play** with data
- **Review**
  - Presentation and review of results
  - Typical mistakes
  - Further details on analysis method

How do we polish you off?

Decisions Sciences: Advanced/Project course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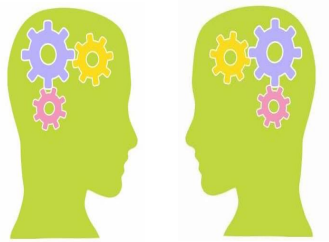
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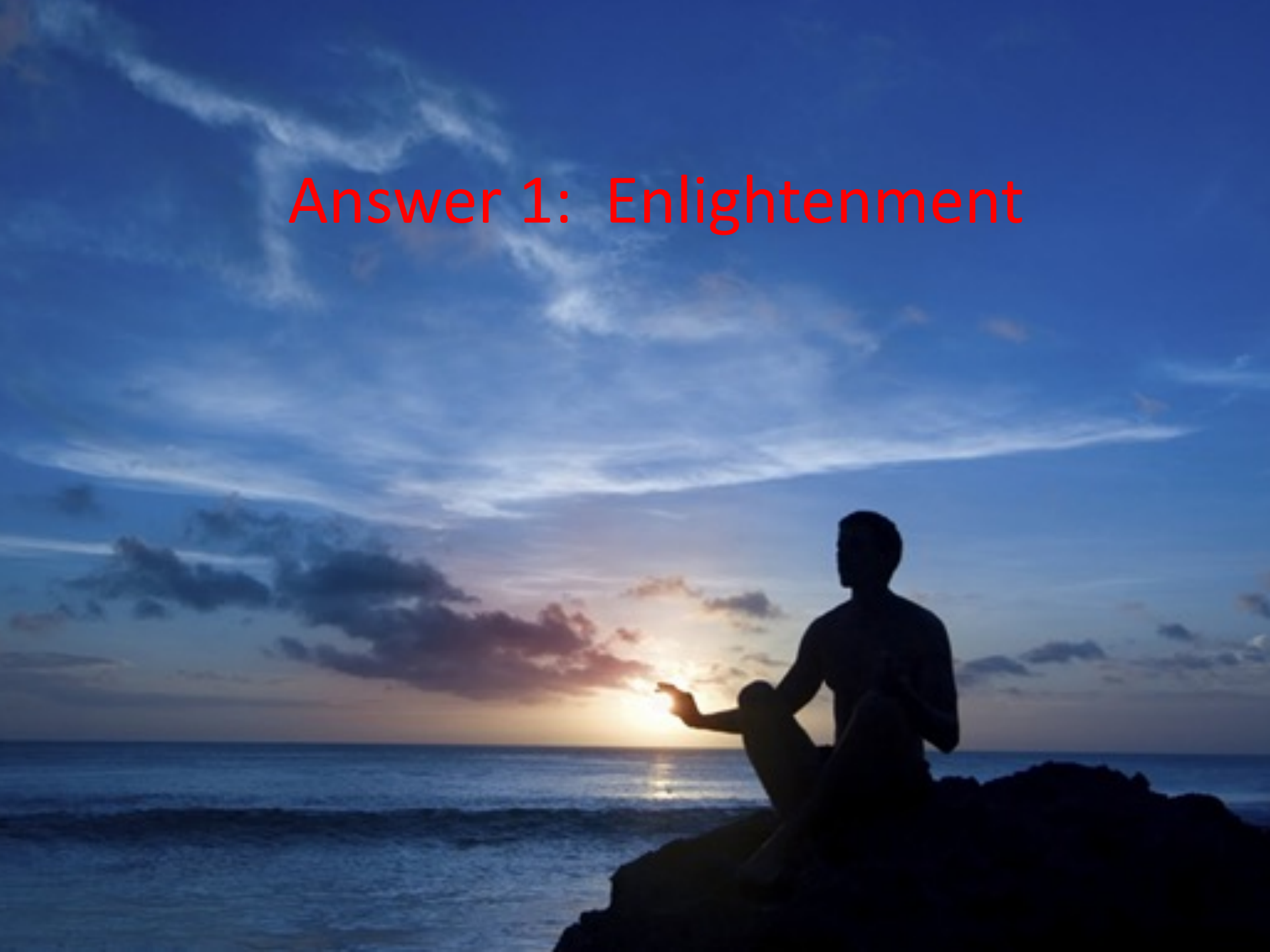
- Structure a problem
- Team work
- Presentations
- Final report

Thesis conditions

- **WU**: StEOP, CBK, and „Basics of scientific research“

- **Institutes:**
  - SBWL „Decisions Sciences”
  - Capacity
  - Supervisor
  - Quality proposal

Where does the SBWL Decision Sciences lead to?


Answer 1: Enlightenment


Answer 2: Money

Answer 2: A great career in almost *any* kind of job

Risk analysis and management

M&A / CF strategic due diligence

Supply Chain Management

Processes and negotiations

Forensic analysis

HR design of incentive systems

Data analytics

Key project management

I am sold! How do I get in?

- We are looking for students who are **clever**, **creative,** and **analytical**.
- 50 students per term.

- Preconditions:
  - BA WiSo: STEOP: Intro BWL+ VWL, Math, CBK: Stats
  - BBE: Bus & Soc, Microeconomics, Quant Methods 1+2

- LPIS-Registration for AG “Access to Specialization: Decision Sciences”)
- **and** application via institute website

- Ranking via GPA, with higher weight on intro math and stats courses, and motivation letter

Questions?

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