



Fall Term 2023  
**Quantitative Methods in SpORts (S)**  
*Syllabus*

*BA Seminar*

---

**INSTRUCTOR AND SEMINAR INFORMATION**

**Professors**

**Prof. Dr. Christiane Barz**

Chair of Mathematics for Business and Economics & Center of Research in Sports Administration (CRSA)

**Prof. Dr. Helmut M. Dietl**

Chair of Services & Operations Management & Center of Research in Sports Administration (CRSA)

**Prof. Dr. Oleg A. Prokopyev**

Chair of Quantitative Business Administration & Center of Research in Sports Administration (CRSA)

---

**Dates, location, ECTS, and language**

Dates: September 15, November 3 and 10, 2023. Morning and afternoon sessions

Seminar format: on-site Bachelor block seminar

Language: English

ECTS: 3

Location: Please see [UZH Course Catalogue](#) for further details



---

**Application** via the following online form:

<https://www.uzh.ch/zi/cl/umfragen/index.php/122495?lang=en>

Application deadline (extended): August 15, 2023





## **SEMINAR DESCRIPTION**

The application of mathematical/quantitative methods to the study and analysis of a wide variety of sports problems has become increasingly popular in recent years. This trend can be attributed to the increased availability of “big” data and the advancements in theoretical and computational analytics techniques, e.g., machine learning, operations research. It has been demonstrated by multiple examples that mathematical/quantitative methods may provide powerful insights and/or competitive advantages as well as help the sport organizations to improve their performance by making more informed and sophisticated decisions.

The seminar will review the mainstream literature on applications of quantitative methods in various sports related contexts. We will discuss multiple thought-provoking application examples ranging from classical scheduling problems in different sport leagues to modern “fantasy” sports. The seminar participants will become familiar with challenges and opportunities arising when applying quantitative methods to modern sports.

## **INTENDED LEARNING OBJECTIVES**

The seminar aims to stimulate students’ learning with a combination of teaching methods: readings from academic journals and newspapers, class presentations, discussions, and group projects. By the end of the seminar, participants should have gained in-depth knowledge on the topic and the related interdisciplinary challenges reflected in the following specific learning objectives:

- understanding of basic methodological concepts used in various sport related applications,
- being able to explain and critically discuss (with data and/or theoretical concepts) various examples of quantitative methods applied to sports problems,
- being able to identify and critically discuss opportunities, the resulting challenges, and the desired outcomes for potential future applications of quantitative methods in sport related settings.

## **PARTICIPANTS**

The seminar is open to:

- (1) Bachelor students of the Business Administration program (BWL);
- (2) Bachelor students from other programs with a justified interest in quantitative methods in sport related applications

## **ASSESSMENT AND GRADES**

The final grade of the seminar consists of participation, a group presentation and a group project. The description and the weight of the assessment items are described below:

- PARTICIPATION (20%). Students will be assigned readings, which prepare participants for in-class discussions.
- PRESENTATION (30%). In a small group, students present concepts and managerial issues related to various applications of quantitative methods in sports.



- GROUP PROJECT (50%). From theory to practice. The final project is a formal research proposal, in which students review the related literature and critically discuss the previous models and methodologies applied to a particular sports problem. The project should also identify potential future opportunities for application of quantitative methods in the considered sport setting and discuss potential implementation challenges and desired outcomes.

#### **SCHEDULE AND SEMINAR PLAN**

Online application via <https://www.uzh.ch/zi/cl/umfragen/index.php/122495?lang=en>

Application deadline (extended): August 15 (Tue), 2023

Acceptance Decision (extended): August 22 (Tue)

Introductory Meeting: September 15 (Fri), 9:00-12:30am

1<sup>st</sup> Meeting with Presentations: November 3 (Fri), 9:00am - 5:00pm

2<sup>nd</sup> Meeting with Presentations: November 10 (Fri), 9:00am - 5:00pm

#### **LEARNING RESOURCES**

There is no required textbook for the seminar. The lectures and notes of the seminar contain several research articles and book chapters for debate and discussion. The reading material will be readily available for students on OLAT.

#### **OTHER INFORMATION AND TIPS FOR PARTICIPANTS**

Academic integrity and plagiarism. Participants are expected to have a truthful and ethical behaviour and be familiar with the rules and procedures against plagiarism. Students will be held accountable for violations of these rule and procedures during the seminar. For more information on plagiarism and treatment at UZH, you can access a short info sheet in the following link: [http://www.oec.uzh.ch/studies/general/theses/Merkblatt\\_Plagiate\\_201501.pdf](http://www.oec.uzh.ch/studies/general/theses/Merkblatt_Plagiate_201501.pdf)