**FAECTOR/ESE Excellence Programme 2023**

**NOTE: This is a preliminary programme, intended to give students an overview of what participation will look like. While most of the below outlined events have been confirmed, no rights can be derived from the information in this document.**

Content and Learning objectives

The FAECTOR/ESE Excellence Programme will take place during blocks three, four and five of the academic year 2022-2023. The programme is intended for bachelor students in Econometrie, Econometrics and Double Bachelor Econometrics/Economics from second year and up, as well as pre-master Econometrics and Management Studies students.

The central theme of the programme is “Econometrics and Health”. After completing this programme, students will have gained a basic to intermediate level of knowledge into the overarching fields of Epidemiology, Biostatistics and Healthcare Logistics. Additionally, the goal is to provide understanding how Econometric models can be applied to Health Data, and what career possibilities there are for Econometricians interested in Health and Medicine. The programme will not only teach them theoretical contents, but also enable them to apply the learnings in programming assignments, essays and presentations.

Apart from the aforementioned goals, the FAECTOR/ESE Excellence Programme also aims to give students the opportunity to develop their softs skills. During the programme they will write an essay and present their findings in groups. This will help them develop their soft skills in writing and presenting. Furthermore, we will be incorporating group work into the assignments which will develop their teamwork and cooperation skills.

We start with an introduction into the field of Epidemiology, with topics including the research focus in the field, common problems and their methodology. We then build on this introduction by moving into more applied topics such as the programming of epidemiological models and conclude the first part with a programming assignment for a biostatistical exercise. In the second part of the programme we dive even further into Epidemiology: looking at Computational Biology and Genome Modeling as well as topics like Excess Mortality or the ethical aspects of Cancer screening. In the final block the students will learn about health logistics, i.e. scheduling and planning problems, optimal allocation of resources, also including a programming assignment.

Students are required to be present at 80% of the sessions and pass the assignments (pass/fail grading) in order to successfully complete the programme. Sessions are usually on Wednesdays from 17:00 to 19:00

Programme

***Epidemiology 1***

| **Date** | **Content** |
| --- | --- |
| 18-1 | Theoretical lecture: Introduction to Epidemiology |
| 25-1 | Workshop: Breath testing for colorectal cancer screening |
| 1-2 | Theoretical lecture: Introduction to Biostatistics |
| 8-2 | Theoretical lecture: Epidemiological models |
| 15-2 | Programming Assignment session: Biostatistical Data Analysis and Presentation |

***Epidemiology 2***

| **Date** | **Content** |
| --- | --- |
| 1-3 | Theoretical lecture: Organ allocation: Computational approach |
| 6-3 | Theoretical lecture: Computational Biology and Genome Modeling |
| 8-3 | Programming assignment: Computational Biology and Genome Modeling |
| 15-3 | Theoretical lecture: Survival models |
| 22-3 | Guest lecture: Excess Mortality |
| 29-3 | Company visit: TBD |
| 5-4 | Workshop: Infectious disease modeling |
| 12-4 | Theoretical lecture: Cancer screening and disease prediction: Ethical Aspects |

*Assignment 2* (due May 1st): Essay about ethical aspects of disease prediction (500-800 words)

***Healthcare Logistics***

| **Date** | **Content** |
| --- | --- |
| 1-5 | Essay presentations |
| 3-5 | Theoretical lecture: Introduction to hospital and emergency response management |
| 10-5 | Theoretical lecture: Scheduling, mapping and spatial health econometrics |
| 17-5 | Company visit: TBD |
| 24-5 | Programming Assignment: Case study Applied Healthcare Logistics |
| 31-5 | Theoretical lecture: Automation and digital health |
| 7-6 | Workshop: TBD |
| 14-6 | Essay Presentation: The future of Healthcare |

*Final Assignment* (due on June 12th): Three essay topics corresponding to the respective blocks. Students can then choose their respective topic and implement the (programming) knowledge they have (1800-2000 words).