**Logic of Norms**

2023

A Summer school held by School of Philosophy at Zhejiang University

**Basic Info:**

**Instructor:** Prof. John-Jules Meyer and Prof. Mehdi Dastani (Utrecht University, the Netherlands)

**Organizer**: Jieting Luo (Zhejiang University)

**Teaching Assistant**: Xian He (Zhejiang University)

**Time:** July 31 – August 4, 19:00 – 22:00 (Beijing Time)

**Platform：**Zoom

**Introduction:**

This course introduces different logic-based formalisation of norms. Deontic logic is the logic of obligations, prohibitions and permissions. More conceptually, it is the logic of ideal states of affair versus actual states of affair. As such it is a foundation of the fields of law and ethics, but also of normative systems, where agents are susceptible to norms while acting. In this course we will see how deontic logic can be viewed as a branch of modal logic. In order to deal with problems of proper representation, such as the infamous paradoxes of deontic logic, researchers have looked for alternative formalisations such as dyadic deontic logic and non-normal modal logic. In this course based on the book mentioned below, we will also look at a very abstract and general way of treating deontic logic. We then move to norms in multi-agent systems. We distinguish the main types of norms used in multi-agent systems, and the ways in which the behaviour of a system can be modified through the enforcement of norms.

The course is divided into five 3-hour sessions.

Textbook and paper:

- Parent, Xavier, and Leon van der Torre. *Introduction to deontic logic and normative systems*. College Publications, 2018.

- Alechina, Natasha, Mehdi Dastani, and Brian Logan. "Norm specification and verification in multi-agent systems." *Journal of Applied Logics* 5.2 (2018): 457.

**Schedules:**

Session 1: Modal Logic Basis

Session 2: Monadic Deontic Logic

Session 3: Dyadic Deontic Logic

Session 4: Temporal Logic

Session 5: Norms in Multi-agent Systems