

Code(s): BMI-LOTD-308E, BMA-LOTD-308

Title: Advanced Modal Logic

Lecturer(s): William Brown

Location and time: i/ -104, Thursday 12:00 - 13:30

Consultation (e-mail): williamjosephbrown (at) gmail . com

General aim of the course: Study techniques and systems of modal logic

Content of the course:

After a review of basic modal logic and its semantics (using Kripke frames), we will study some limitations of this kind of semantics (incompleteness results), and introduce other kinds of semantics (algebraic semantics, and general frame semantics).

We will then study :

- modal model theory
- correspondence theory
- various systems / families of modal logic: temporal, non-normal, hybrid, etc.

This course is suitable for students who have some familiarity with logic (modal or not). Some familiarity with propositional logic is expected. Motivated students who haven't studied much logic are also welcome.

Bibliography:

- Blackburn, P., Rijke, M. de., Venema, Y., Modal Logic. Cambridge tracts in theoretical computer science 53, 2001.

Further reading:

- Blackburn P., van Benthem J., Wolter F., Handbook of Modal Logic. Elsevier, Series: Studies in Logic and Practical Reasoning (volume 3), 2006.
- Beal, J.C., Frassen, van B.C., Possibilities and Paradox: An Introduction to modal and many-valued logic. Oxford University Press, 2003.
- Fine, K., An incomplete logic containing S4. Theoria 40:23–29, 1974.
- Thomason, An incompleteness theorem in modal logic. Theoria, 40:150–158, 1974.