Introduction to continuous logic, fall 2015

Introduction to continuous logic, fall 2015

Teacher: Åsa Hirvonen

Scope: 5 op

Type: Advanced studies

Teaching:

Topics: Continuous logic is a [0,1]-valued generalization of first order logic developed for the study of metric structures such as Banach spaces and operator algebras. This course gives a short introduction to the logic and its models.

Prerequisites: Logic I or Mathematical logic is recommended.

News

- 18.12. The grading of the course is ready. The grade should show in Oodi soon. For more details, contact the lecturer.

Teaching schedule

Weeks 44-50, Monday 10-12 and Thursday 14-16 in room B120. In additon, two hours of exercise classes per week.

Exams

Course exam on Wednesday 16.12. at 12.00-14.30 in one of the auditoriums in Exactum.

Course material

As course material we will use the following survey article:

I. Ben Yaacov, A. Berenstein, C.W. Henson, A. Usvyatsov, *Model theory for metric structures,* in: Model Theory with Applications to Algebra and Analysis, Vol. II, Z. Chatzidakis et al. (eds.), London Math. Soc. Lecture Note Ser. 350, Cambfidge Univ. Press, Cambridge, 2008. Available via C. Ward Henson's webpage www.math.uiuc.edu/~henson/cfo/mtfms.pdf

Registration

Did you forget to register? What to do?

Exercises

Assignments

- Set 1 (for 6.11.) exercise added 2.11. (note: some uniform continuity needs to be assumed in 1)
- Set 2
- Set 3 (note: there was an error in exercise 3.2, it is now corrected)
- Set 4 (note: in 5, M needs to be non-compact)
- Set 5

- Set 6

Exercise classes

Group	Day	Time	Room	Instructor
1.	Friday	10-12	C123	Åsa Hirvonen

Logbook

26.10. Formulas
29.10. Systems of connectives
2.11. Semantics
5.11. logical equivalence, logical distance, conditions, theories
9.11. example: the theory of probability algebras; elementary embeddings and substructures
12.11. Tarski-Vaught Test; filters, ultrafilters and D-limits
16.11. Ultraproducts
19.11. The Fundamental Theorem of Ultraproducts
23.11. Compactness
26.11. Saturation
30.11. more on saturation
3.12. Implications; Types and the logic topology
7.12. The d-metric on types
10.12. Short glimpse on definability and distance predicates

Course feedback

Course feedback can be given at any point during the course. Click here.