The Hebrew University of Jerusalem

Syllabus

Philosophy of Mathematics - 15591

Last update 19-02-2019

HU Credits: 2

Degree/Cycle: 1st degree (Bachelor)

Responsible Department: Philosophy

Academic year: 0

Semester: 2nd Semester

Teaching Languages: English

Campus: Mt. Scopus

Course/Module Coordinator: Dr. Casper Storm Hansen

Coordinator Email: casper_storm_hansen@hotmail.com

Coordinator Office Hours: By appointment

Teaching Staff:

Dr. Casper Storm Hansen

Course/Module description:

At the hearth of philosophy of mathematics lies a combined metaphysical-epistemological problem: It seems that any hypothesis about what mathematical objects there are would either be too impoverished to justify classical, mainstream mathematics or so extravagant that it would go beyond what we seem to have epistemic access to, making our knowledge of mathematical theorems a mystery. This course will revolve around proposed solutions to this problem, known as Benacerraf's Problem.

The following is a tentative list of subjects:
- Classical mathematics and the cumulative hierarchy of sets (Cantor)
- Logicism (Frege, Russell)
- Intuitionism (Brouwer)
- Predicativism (Weyl)
- Formalism and Gödel's incompleteness theorems (Hilbert)
- Rule following (Wittgenstein)

Although this is a course in philosophy and not mathematics, basic knowledge of logic and mathematical analysis is required.

Course/Module aims:

In-depth knowledge of the subjects mentioned above. Without aiming for comprehensiveness, this range of subjects should also give a reasonably good overview of the philosophy of mathematics as such.

Learning outcomes - On successful completion of this module, students should be able to:

- understand some of the classical problems of, and positions in, philosophy of mathematics.
- critically discuss those problems and positions.
- connect philosophy of mathematics with more general philosophical issues, in particular in metaphysics, epistemology, and logic.
- read technical philosophical literature.
- use feedback to develop their own writing through multiple iterations of drafts.

Attendance requirements(%):

TBD

Teaching arrangement and method of instruction: A typical session will consist of

2/3 lecture and 1/3 discussion.

At the end of the course a final paper must be turned in. In order to train writing skills, students will be given ample feedback on their paper prior to final submission: A first draft of that paper must be turned in at an earlier date for the purpose of student-to-student feedback (each student will be required to provide feedback on app. two other papers). A second draft must be turned in shortly thereafter for the purpose of teacher feedback.

Course/Module Content:
TBD

Required Reading:
TBD

Additional Reading Material:
TBD

Course/Module evaluation:
End of year written/oral examination 0 %
Presentation 0 %
Participation in Tutorials 25 %
Project work 75 %
Assignments 0 %
Reports 0 %
Research project 0 %
Quizzes 0 %
Other 0 %

Additional information: