



CEU SUMMER UNIVERSITY

Nádor u. 9., Budapest, Hungary 1051

Tel.: (36 1) 327 3069, 327 3811

Fax: (36-1) 328-3698 or (36-1) 327-3124

E-mail: summeru@ceu.hu

Website: <http://www.ceu.hu/sun>

TENTATIVE SYLLABUS

DESCRYING THE WORLD IN PHYSICS

There will soon be a web page with relevant papers and an updated syllabus with readings. In the meantime material to read by way of preparation:

- David Albert *Quantum Mechanics and Experience* (Q&E)
- David Albert *Time and Chance* (T&C)
- Tim Maudlin *Quantum Mechanics and Locality* (Q&L)

There are readings attached to the course website (<http://www.sun.ceu.hu/3Courses/courses.php>) and a copy of *The Metaphysics Within Physics* (MWP) by Tim Maudlin and other papers by other faculty on reserve in the CEU library.

For an overview of philosophy of physics look at Albert's article "Philosophy of Physics".

To obtain readings click on the course webpage "readings". The name and passwords have been distributed among the course participants.

There is quite a lot of readings and our course is just two weeks so it is a good idea to look at those that you are not familiar with a bit before hand. We don't really expect anyone to read all of these papers but they will be useful for your later work.

If you have any questions get in touch with Barry Loewer: loewer@rci.rutgers.edu

July 3

9.30 Meet in the philosophy department (4th floor Zrinyi Street 14, room #412) for introductions.

10.00 – 13.00 Introduction to the project of Describing the World in Physics (Loewer)
The Rise of Physicalism (Papineau)

Readings:

- "The Rise of Physicalism" (Papineau), "From Physics to Physicalism" (Loewer)
- It is also worth taking a look at Frank Jackson's book *From Metaphysics to Ethics* and the paper by Chalmers and Jackson "Conceptual Analysis..." on the course site

13.00 – 13.30 Computer Lab Tour

15.00 – 17.00 Classical physics and Space-time (Maudlin)

Readings:

- "Space in Physics" (Huggett)

19.00 Welcome Party at Kerepesi Dormitory

July 4

10.00 – 12.00 Intro to Relativity (Maudlin)

Readings:

- “Relativity” and chapters from *Q&R* first few chapters on Relativity

14.00 – 17.00 Intro to QM the measurement problem and Quantum Non-locality (Albert)

Readings:

- *Q&E* chs 1-5

July 5

10.00 – 13.00 Bohmian Mechanics (Maudlin)

Readings:

- “Bohmian Mechanics. *Q&E* (Albert) Goldstein et al. (Look at the web page for Sheldon Goldstein for many important papers about Bohmian mechanics.

13.00 – 14.00 Library Tour

15.00 – 17.00 GRW (Albert)

Readings:

- “Tails of Schroedinger’s Cat” (Albert/Loewer)
- “Non-Local Correlations: How the Trick Is Done” (Maudlin)

17.00 – 18.00 discussion

July 6

10.00 – 13.00 Many Worlds/Many Minds (Papineau/Wallace)

Readings:

- “David Lewis on Schroedinger’s Cat” (Papineau)
- “Three Kinds of Branching” (Wallace)
- also look at David Wallace’s web page: <http://users.ox.ac.uk/~mert0130/evprob.html>

15.00 – 17.00 Many Worlds and Probability (Wallace)

Readings:

- “Epistemology Quantized” (Wallace), “Probability in the Everett World” (Price)

17.00 – 18.00 discussion

July 7

10.00 – 13.00 Space in QM; Narrativity (Albert)

Readings:

- Two papers by Albert “Narrativity” and “Space and QM” (not yet on the web site)
- also see the paper by Monton on the website

15.00 – 17.00 Physics and Mind (Papineau, Balog, Loewer)

Readings:

- “Consciousness and...” (Chalmers), “Conceivability, Possibility...” Balog;
- “Quantum Mechanics and Consciousness” (Loewer)
- “Phenomenal Concepts” (Papineau)

17.00 – 18.00 Discussion

July 8

July 9

Boat trip to Szentendre

July 10

10.00 – 13.00 Statistical Mechanics; Albert: Statistical Mechanics (Fundamental structure of the world)

Readings:

- *T&C* ch 1-4, 6

15.00 – 17.00 Determinism (Hofer)

July 11

10.00 – 13.00 Lewis' Program (Loewer) Laws and Humean Supervenience "Humean Supervenience" "Natural Properties"

14.00 – 17.00 Anti-Humeanism: Fundamental Properties and Laws (Maudlin)

Readings:

- "Deep Metaphysics" and "Why I am not Humean" in *MWP*

17.00 – 18.00 discussion

July 12

10.00 – 13.00 Humean/non-Humean accounts of Chance (Loewer, Hofer)

Readings:

- "The Third Way" (Hofer)

- "Lewis' Account..." (Loewer)

15.00 – 17.00 What is Objective about Objective Probability: Maudlin

Readings:

- paper with the same name and paper by Ned Hall.

17.00 – 18.00 Discussion

July 13

10.00 – 13.00 Direction of time (Loewer/Maudlin/Albert)

Readings:

- "Counterfactuals and the Third Law" (Loewer)

- "On the Passing of Time" (Maudlin) in *MWP*.

15.00 – 17.00 The Whole Ball of Wax and Discussion (Maudlin/Loewer)

Readings:

- "The Whole Ball of Wax" in *MWP*

- "Natural Properties and Laws" (Loewer) not yet on the web page.

19.00 Dinner for everyone.

July 14

10.00 – 13.00 Causation and Special Sciences (Maudlin, Hofer, Loewer/Balog)

Readings:

- “Why There is Anything Except Physics” (Loewer)

15.00 – 17.00 Sum up and Discussion