

## **PROGRAMMA VISITING SCIENTIST**

**PROF. RAYMOND TURNER**

**UNIVERSITY OF ESSEX, UK.**

### **Lectures on the Philosophy of Computation**

---

This course aims to discuss the philosophical foundations of computability theory and formal arithmetic. These two closely related topics emanate from Gödel's theorem and the undecidability of first order logic. The course will examine the central theorems, their proofs, and their philosophical implications. Topics include the undecidability of first order logic, the incompleteness of formal arithmetic and structuralism in philosophy of mathematics. In particular, according to structuralism arithmetic is about a single structure. First-order theories have nonstandard models that do not instantiate this structure. Proponents of structuralism have put forward various strategies to fix one single structure as the intended interpretation of our arithmetical language. Tennenbaum's theorem states that any model with addition and multiplication as recursive operations is isomorphic to the standard model of arithmetic. We shall examine this proposal. Finally, we consider polynomial arithmetic, and end with a proposal concerning the practice of ordinary arithmetic.

---

Giovedì 12 maggio, ore 16:00, aula H  
(Saluti del vicedirettore del Dipartimento Prof. Luigi Matt)

Giovedì 19 maggio, ore 16:00, aula H

Giovedì 26 maggio, ore 16:00, aula H

Giovedì 2 giugno, ore 16:00, aula H

Giovedì 9 giugno, ore 16:00, aula H

Giovedì 16 giugno, ore 16:00, aula H

Giovedì 23 giugno, ore 16:00, aula H