THE ACCELERATING EXPANSION OF THE UNIVERSE - SYLLABUS

Title of the Course: The accelerating expansion of the Universe
Number of hours: 10min lecture.
Term and year: Spring term, 2015.

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DESCRIPTION

This lecture pretends to be a very first contact with Cosmology and the main goal is to let the students come across with fundamental concepts in Cosmology. It is a basic-level course, aimed for non-science students. Mathematical computations are not required.

COURSE OBJECTIVES

At the end of the course, students must be able to understand the following outcomes:

1. Cosmology treats the Universe as a fluid where galaxies are particles.
2. Ordinary matter today is less than 5% of the total content of the Universe.
3. The Universe has gone through different epochs and it cools down as it expands.
4. Theories as General Relativity +Cosmological Constant/ Dark Energy predicts accelerating expansion of the Universe nowadays.
5. Theories can be falsified by using supernovae datasets.

COURSE CONTENTS

List of contents of the course:

1. What is Cosmology?
2. The History of the Universe.
3. The Universe today.
4. Observations.
5. Data and theory predictions.
6. Open questions…

REQUIRED STUDENT RESOURCES

Main references in order of difficulty:

** S. Hawking, "A brief History of time", Batam Press edition, London UK (1988).
** A.Liddle, "An introduction to modern cosmology", Chichester, UK: Wiley (1998).
** V.Mukhanov, "Physical foundations of cosmology",Cambridge, UK: Univ. Pr. (2005).

Some audio-books can be available for vision impared/ blind students.

COURSE SCHEDULE/OUTLINE/CALENDAR OF EVENTS

One mini lecture of ten minutes: 23rd April, 2-5 pm, Fulton 205.

EVALUATION PROCEDURES AND GRADING CRITERIA

No kind of evaluation is required.