

COURSE DETAIL

ANALYTICAL MECHANICS

Country

Italy

Host Institution

University of Bologna

Program(s)

University of Bologna

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Physics

UCEAP Course Number

118

UCEAP Course Suffix**UCEAP Official Title**

ANALYTICAL MECHANICS

UCEAP Transcript Title

ANALYTCL MECHANICS

UCEAP Quarter Units

6.00

UCEAP Semester Units

4.00

Course Description

The course focuses on basic knowledge of the Lagrangian and Hamiltonian mechanics and simple integrable models. Students are trained to write the Lagrangian and the Hamiltonian function for mechanical systems, to analyze the phase space and the stability of fixed points, to integrate the equation of a central field and a rigid body with rotational symmetry, and to use variational principles and canonical transformations. Course topics including dynamical systems; the definition of Equilibrium and study of its linear and non-linear stability; Lagrangian mechanics; symmetries; Noether's theorem; mechanical models; rotation group and rigid body; dynamics in a rotating frame; and Hamiltonian mechanics.

Language(s) of Instruction

Italian

Host Institution Course Number

00686

Host Institution Course Title

MECCANICA ANALITICA

Host Institution Course Details

<https://www.unibo.it/en/teaching/course-unit-catalogue/course-unit/2022/434316>

Host Institution Campus

BOLOGNA

Host Institution Faculty

Host Institution Degree

L in PHYSICS

Host Institution Department

Physics and Astronomy

Course Last Reviewed

2022-2023

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