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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