

COURSE DETAIL

THE HIGGS BOSON AND THE FUTURE OF PARTICLE PHYSICS

Country

United Kingdom - England

Host Institution

Lady Margaret Hall, University of Oxford

Program(s)

Summer in Oxford, Lady Margaret Hall

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Physics

UCEAP Course Number

109

UCEAP Course Suffix

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UCEAP Official Title

THE HIGGS BOSON AND THE FUTURE OF PARTICLE PHYSICS

UCEAP Transcript Title

PARTICLE PHYSICS

UCEAP Quarter Units

6.00

UCEAP Semester Units

4.00

Course Description

This course explores the universe at the smallest distances and highest energies where quantum mechanics and special relativity collide. Through lectures from world-experts and hands on seminars, students will join the particle physicists from the Large Hadron Collider's ATLAS experiment in analyzing real proton collisions from the world's largest machine - uncovering the secrets of the building blocks of the universe. The course uses coding notebooks to teach Python data analysis techniques used by professional particle physicists, progressing from the very basics, to rediscovering the Higgs boson, and culminating to an original analysis of real data. Along the way students develop computer coding, big data analysis and machine learning skills that will carry over to the real world.

Language(s) of Instruction

English

Host Institution Course Number

Host Institution Course Title

THE HIGGS BOSON AND THE FUTURE OF PARTICLE PHYSICS

Host Institution Course Details

<https://www.lmh.ox.ac.uk/higgs-boson-and-future-particle-physics>

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department

Course Last Reviewed

2026-2027

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