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DANGOOR EDUCATION

Statement of participation

Sandy Herho

has completed the free course including any mandatory tests for:

Particle physics

This free course provided an overview of current concepts and theories in particle physics.

Issue date: 28 April 2021

www.open.edu/openlearn

This statement does not imply the award of credit points nor the conferment of a University Qualification.
This statement confirms that this free course and all mandatory tests were passed by the learner.

Please go to the course on OpenLearn for full details:
https://www.open.edu/openlearn/science-maths-technology/particle-physics/content-section-0

COURSE CODE: **SM123_1**

Particle physics

https://www.open.edu/openlearn/science-maths-technology/particle-physics/content-section-0

Course summary

This free course, Particle physics, will give you an overview of current concepts and theories in the field. You will learn about the fundamental components of matter – known as leptons and quarks – and the composite particles, such as protons and neutrons, which are composed of quarks. You will see that all particle reactions may be described in terms of one of two fundamental interactions, known as the strong and the weak interactions, responsible for binding particles together and allowing them to change type, respectively.This OpenLearn science course was updated with the kind support of Dangoor Education340, the educational arm of The Exilarch's Foundation.

Learning outcomes

By completing this course, the learner should be able to:

- recognise and name the six flavours of lepton and the six flavours of quark.
- understand that all leptons and quarks have corresponding antiparticles
- appreciate that quarks and antiquarks combine to form baryons, antibaryons and mesons.
- write balanced strong interactions, understanding the role of gluons
- write balanced weak interactions, understanding the role of W and Z bosons

Completed study

The learner has completed the following:

Section 1

Particle physics in context

Section 2

Leptons

Section 3

Quarks

Section 4

Hadrons

Section 5

High-energy reactions

Section 6

Strong interactions

Section 7

Beta-decay at the level of quarks and leptons

Section 8

Weak interactions

Section 9

Conclusion