



## Certificate of Achievement

# Matthias Giger

has completed the following course:

### HOW COMPUTERS WORK: DEMYSTIFYING COMPUTATION RASPBERRY PI FOUNDATION

This online course explored the basics of how computers work, from the use of transistors up to the CPU. It covered how transistors act as digital switches and combine to create logic gates, combining gates to perform binary calculations, Von Neuman Architecture and the Fetch-Execute cycle.

4 weeks, 2 hours per week



Dr Sue Sentance  
Raspberry Pi Foundation



Raspberry Pi

The person named on this certificate has completed the activities in the attached transcript. For more information about Certificates of Achievement and the effort required to become eligible, visit [futurelearn.com/proof-of-learning/certificate-of-achievement](https://futurelearn.com/proof-of-learning/certificate-of-achievement).

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Raspberry Pi

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#### STUDY REQUIREMENT

4 weeks, 2 hours per week

#### LEARNING OUTCOMES

- Explore how transistors can act as digital switches and be combined to create logic gates
- Produce truth tables for AND, NOT and OR gates, individually or combined
- Explore how computers use binary arithmetic
- Explore how logic gates can be combined to produce digital circuits that can perform a calculation
- Investigate Von Neuman Architecture and the Fetch-Execute cycle

#### SYLLABUS

- How computers use binary arithmetic
- How transistors can act as digital switches and be combined to create logic gates
- Creating truth tables for AND, NOT and OR gates, individually or combined
- How logic gates can be combined to produce digital circuits that can perform a calculation
- Von Neuman Architecture and the Fetch-Execute cycle