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> Battery Assembly Skills Bootcamp



## Battery Assembly Skills Bootcamp



Deadline for applications: 4 October 2024.

### Course overview

Training and skills development in batteries is necessary to deal with the increasingly electrified society of the future. Having relevant and sufficient training in batteries offers a competitive advantage to people who work or want to work in multiple areas of electrification. This innovative bootcamp on Battery Assembly aims to equip you with a thorough understanding of various battery technologies, battery parameters, battery design and management, manufacturing and assembling battery safety amongst others.

# SKILLS FOR LIFE

## SKILLS BOOTCAMPS

The 10-week course offers you the opportunity to familiarise and learn the following content:

- › Understand the principles and operation of various types of battery technologies.
- › Understand the manufacturing and assembly process of commonly used battery technologies.
- › Apply knowledge of battery design to practical applications like EV battery capacity calculation.

**Apply for this course** (<https://webapp.coventry.ac.uk/CUapply/>)

## Course duration

This course will run over 10 weeks from **4 November 2024 to 13 January 2025**. For more details please contact [CUSkillsBootcamp@cusltd.co.uk](mailto:CUSkillsBootcamp@cusltd.co.uk) (<mailto:CUSkillsBootcamp@cusltd.co.uk>).

## Venue

This course will delivered online.

## Why you should study this course

You will explore multiple battery topologies and their assembly process. Practical applications in industries, automotive, and renewable energy systems are emphasised, ensuring that you can apply theoretical concepts to real-world scenarios.

## About Skills Bootcamps

Skills Bootcamps are flexible courses of up to 16 weeks for adults aged 19 or over and can give you the opportunity to build up valuable sector-specific skills based on local employer demand and can provide a direct path to a job on completion. They are free to individuals. Where an employer is training an existing employee, they must contribute to the cost of the course. For small or medium sized enterprise: £440 and large sized enterprise: £1320. Please contact [CUSkillsBootcamp@cusltd.co.uk](mailto:CUSkillsBootcamp@cusltd.co.uk) (mailto:CUSkillsBootcamp@cusltd.co.uk) for more information.

Skills Bootcamps are aimed at adults who are either unemployed, in work, self-employed, looking to change career or returning to work after a break. They are an opportunity to learn and develop technical skills in the chosen Skills Bootcamp. We encourage all eligible adults to apply, including those from underrepresented groups.

*Places are limited and will be allocated on a first-come, first-served basis to eligible applicants. Please note that individuals are only eligible to participate in one Skills Bootcamp per financial year and must not be on more than one Skills Bootcamp at any one time, but you can apply for multiple Skills Bootcamps.*

## Collaborations with other organisations

### West Midlands Combined Authority



### Gradcore



## What you'll study

### Week 1

- › Evolution of battery technologies
- › Basic electric fundamentals
- › Introduction to battery parameters

## **Week 2**

- › Types of Batteries: Primary
- › How electrochemical cells work
- › Primary Batteries—Introduction
- › Types of Primary Batteries

## **Week 3**

- › Types of Batteries: Secondary
- › Secondary Batteries—Introduction
- › Types of Secondary Batteries
- › Introduction to reserve batteries

## **Week 4**

- › How to read and interpret a battery's datasheet
- › Battery Characteristics
- › Battery Applications
- › Different Battery Sizes
- › Battery Standards

## **Week 5**

- › Introduction to Battery Charging & Discharging
- › Constant-potential charging
- › Constant-current charging
- › Battery safety

## **Week 6**

- › Battery Construction and Installation
- › Introduction to battery construction
- › Introduction to battery assembly

**Week 7**

- › Battery Design
- › Ohm's Law and Basic Battery Calculations
- › Converting Customer Requirements into Pack Designs
- › Design for Reliability/Design for Service
- › Failure Modes Effects Analysis

**Week 8**

- › Battery Testing and Service
- › Battery Testing and Analysis
- › Removing and replacing a battery
- › Disposal of a Battery

**Week 9**

- › Battery Management System
- › BMS Typologies
- › Active versus Passive Balancing
- › Thermal Management
- › Mechanical Packaging and Material Selection

**Week 10**

- › Other Emerging Energy Sources
- › Future Trends in Battery Technology
- › Fuel Cells
- › Ultracapacitors
- › Hybrid Energy Storage Systems

We regularly review our course content, to make it relevant and current for the benefit of our students. For these reasons, course modules may be updated.

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**Teaching contact hours**

This course is delivered online Monday to Thursday 6pm to 8pm offering you the opportunity to study from home and around other commitments. Skills Bootcamps are flexible courses that can allow you to build up valuable sector-specific skills based on local employer demand and can provide a direct path to a job on completion.

Our experienced academic staff will provide engaging and stimulating class sessions, bringing in their industry technical experience and research to the virtual classroom.

Throughout this course, you can expect up to 80 hours of learning activities, made up of online teaching and independent learning. Additionally, you will be expected to undertake significant self-directed study of approximately 120 hours, depending on the demands of individual modules.

As an innovative university, we use different teaching methods including online tools and emerging technologies. So, some of your teaching hours and assessments may be delivered online.

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## **Entry requirements**

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## **Fees and funding**

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## **Facilities**

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## **How to apply**

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## **Careers and opportunities**

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## **Further study**

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## **Related courses**

## Disclaimers

### Contact us

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### Our locations

#### [CU London \(/cul/\)](/cul/)

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### Useful links

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