



Sainsbury Wellcome Centre

# Job Description

## FabLab Research Engineer (Electronics & Embedded Systems)

**Department:** Sainsbury Wellcome Centre

**Grade:** 8

**Salary:** £51,474 - £60,521 per annum inclusive of London Allowance

**Hours:** 36.5 (full-time, 1.00 FTE)

**Reports to:** Head of Fabrications Laboratory



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### Context

The SWC Fabrications Laboratory (FabLab) supports and accelerates innovative scientific research through the design, development and deployment of new research instruments.

The team provides multi-disciplinary engineering design and manufacturing expertise supporting ground-breaking research within the Centre, enabling the assessment of scientific and technical requirements as well as the proposal and development of engineered solutions. A high level of investment in the FabLab facilities has equipped the team with state-of-the-art design and manufacturing technologies for the rapid prototyping of electronic, 3D printed, fluidic and precision machined parts.

The FabLab comprises highly skilled and experienced engineers who facilitate a highly-functional and multidisciplinary MakerSpace enabling scientists at all career levels to freely and creatively experiment and prototype ideas.

More information including a list of equipment within the FabLab can be found online [here](#).

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### Main purpose of the job

The FabLab Research Engineer (Electronics & Embedded Systems) performs highly skilled work through design, development, manufacture, assembly and validation of analogue and digital

electronics. Working with the broader innovation and research team, the role holder will support and accelerate innovative scientific research through the design, development, and deployment of new research instruments.

The role holder will be responsible for the use and maintenance of the groups in-house PCB prototyping facility. As such, they will assist engineers and scientists with their electronics needs ranging from advice to manufacturing prototype electronic circuits.

This post is funded until 31 October 2025 in the first instance; the Centre is externally funded with funding awarded in five-year tranches subject to periodic funder review. Subject to successful grant renewal, staff posts will be extended in line with successive funding periods.

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### Duties and responsibilities

- Participates in the complete development lifecycle of experimental scientific equipment, from concept and design through to implementation, validation and deployment in the laboratory.
- Participates in discussion with scientists, fellow engineers and other collaborators of complex and diverse assignments.
- Applying a highly inventive mind-set to propose new ideas and concepts to solve



often varying scientific technical requirements.

- Applying an innovative skill-set to implement new ideas (both own and from others) creating a tangible impact towards novel scientific research.
- Application of ECAD design tools for schematic capture, simulation and printed circuit layout. (Altium Designer).
- Development of real-time embedded microcontroller firmware applications (Raspberry Pi Pico).
- Integration of analogue and digital electronics, microcontrollers, sensors and actuators to form complex modular systems.
- Manufacture of low-volume electronic prototypes and assemblies using state-of-the-art prototyping equipment.
- Rework of electronic assemblies using state-of-the-art rework equipment.
- Use of hand tools for assembly of electronic circuits and fabrication of conceptual devices and prototypes.
- Precision assembly and validation of multidisciplinary systems.
- Documentation of project information.
- Training scientists in the methods and safe-use of a separate MakerSpace facility integral to the centre.
- Supporting scientists' electronic needs as required.
- Maintaining the in-house PCB prototyping facility, procuring stock and ensuring a safe work environment.

- Actively follow and promote all UCL policies including those on Equality, Diversity and Inclusion.
- Maintain an awareness and observation of Fire and Health & Safety Regulations.
- There may, on occasion, be a requirement to work extended hours.
- Follow and actively promote the [UCL Ways of Working](#).
- This job description may be reviewed and be subject to amendment in consultation with the post holder.
- All staff are expected to act professionally, co-operatively and flexibly in line with the post.
- UCL's Sustainability policies and objectives, attend management meetings and undertake such training and development as may be required for the post

The above description is not exhaustive and the post-holder will be required to undertake any other duties as may reasonably be requested within the scope, spirit and purpose of the post.

## General

- Carry out any other duties within the scope, spirit and purpose of the job as requested by the line manager.

# Person Specification

Applicants should copy and paste the following essential criteria (which are assessed on the application form) into the “Statement in support of your application” and describe underneath each criterion how they meet it, giving examples.

Essential Criteria	Assessment method
<b>Qualifications, experience and knowledge</b>	
Degree level or master’s in electrical engineering or equivalent professional experience specialised in analogue and digital electronics.	Application
Strong knowledge of Electrical Engineering fundamentals with the ability to convey expert advice.	Application/Interview
Experienced in interpretation of customer requirements for electronic systems, translation into user stories and technical specification, R&D implemented with an agile methodology, culminating in a customer’s deliverable.	Application/Interview
Design and development of a broad range of electronic devices and systems.	Application/Interview
Expert at Electronic CAD for schematic capture, simulation and printed circuit layout for multilayer and flexi-rigid boards (Altium or equivalent professional application).	Application/Interview
Experience in developing real-time embedded software for ARM Cortex M/A series or Digital Signal Processing	Application/Interview
Experience in software and electronics for embedded design.	Application/Interview
Experience with software version control.	Application/Interview
Excellent understanding of embedded firmware architecture and ability to balance technical trade-offs, including hands-on development experience in C/C++ or MicroPython	Application/Interview
<b>Skills and abilities</b>	
Able to identify and creatively solve a broad range of problems using an analytical approach, with demonstrable evidence of applying this methodology to identify interactions between hardware and software.	Application/Interview
Electronic circuit prototyping, manufacture and assembly of PTH and SMD.	Application/Interview
Hand soldering and rework down to 0.6mm pitch devices and 0603.	Application/Interview
Innovative, with demonstrable evidence of positive outcomes from the implementation of your ideas.	Application/Interview
Ability to work in a fast-paced environment with multiple competing projects.	Application/Interview

Able to work in an agile engineering / science team and on own initiative, self-motivated and willing to learn.	Application/Interview
Able to write clear, maintainable, and well-documented code.	Application/Interview
Able to read technical drawings including but not limited to circuit diagrams & PCB schematic	Application/Interview
Highly competent in the use of test equipment including digital multimeters, oscilloscopes and data loggers/analysers	Application/Interview
<b><u>UCL Ways of Working</u></b>	
<i>Personal Excellence:</i> Delivering on commitments to tasks and people.	Application/Interview
<i>Working Together:</i> Listening closely, and speaking with clarity to all colleagues, staff, students and partners.	Application/Interview
<i>Achieving our Mission:</i> Making sense of complex issues even when information is incomplete.	Application/Interview
<b>Desirable Criteria (<i>Only to be scored if there is a tie break for shortlisting</i>)</b>	
Understanding of PCB manufacture technologies and processes.	Application
Experienced with PCB Prototyping, Pick and Place Assembly and Rework equipment.	Application
Knowledge of modular design on both hardware and software.	Application
Experienced with bare-metal embedded development.	Application

# Apply

To apply for this position visit:

[ucl.ac.uk/work-at-ucl/search-ucl-jobs](https://www.ucl.ac.uk/work-at-ucl/search-ucl-jobs)

Please complete the online application form and use the supporting statement section to outline your interest in joining SWC and how you meet the essential and desirable criteria for the role.

If you have any queries regarding the application process, please email: [swc.hr@ucl.ac.uk](mailto:swc.hr@ucl.ac.uk)

For informal enquiries about the role please contact: Advanced Manufacturing Fabrications Laboratory Manager, Robb Barratt  
[robb.barrett@ucl.ac.uk](mailto:robb.barrett@ucl.ac.uk)

All candidates will be notified of the outcome of their application.

## Probation

Appointments are subject to receipt of satisfactory references and a probationary period of 9 months.

## Annual leave

Annual leave is 27 working days for a full-time member of staff + 6 UCL closure days in addition to 8 Bank Holidays.

## Pension

Post-holders will be eligible to join the Universities Superannuation Scheme (USS), subject to the Scheme's rules and eligibility conditions.

## Hours of Work

UCL's full time working week is 36.5 hours per week. SWC is willing to consider flexible-working arrangements, subject to discussion and agreement with your line manager.

## Other benefits

UCL is a dynamic, global university based in one of the most exciting capital cities in the world. Not only does working at UCL offer the opportunity to work with some of the greatest intellects in the world, it also offers competitive terms, conditions and benefits to its staff.

As part of the UCL community you can access free lunch hour lectures, exhibitions and museums and collections. On campus UCL has the Bloomsbury theatre hosting a range of performances and a series of bars, cafes, and other facilities, which UCL staff can use.

In addition to 41 days annual leave (inclusive of public holidays and closure days) and generous

pension schemes, UCL provides a number of other staff benefits which are linked from the page below:

✓ <https://www.ucl.ac.uk/human-resources/pay-benefits/staff-benefits>

UCL benefits and policies apply equally, whatever the sexual orientation and/or gender identity of employees. Benefits and policies relating to employees partners, includes both different sex and same sex partners.