

<b>Job Title</b> Physical Computing Specialist Technician	<b>Salary</b> £34,943 - £42,914.
<b>Contract Length</b> Permanent	<b>Hours/FTE</b> 35
<b>Grade</b> 4	<b>Location</b> Elephant & Castle
<b>Accountable to</b> Technical Coordinator - Creative Technology	<b>College/Service</b> London College of Communication
<b>Purpose of Role</b> <ul style="list-style-type: none"> <li>To provide professional expertise, guidance and advice in the area of physical computing, electronics, programming and digital interactive development, and contribute to the delivery of academic and technical activities within the College.</li> <li>To provide support for student learning, informal and formal training and instruction, and the development of proficiency with physical computing and programming and relevant platforms, tools, workflows and methodologies.</li> <li>To contribute critical input to student concept and expressive/creative intention, including giving feedback to students.</li> <li>To contribute to student formative assessments, with reference to appropriate learning outcomes of the course or project</li> </ul>	
<b>Duties and Responsibilities</b> <ul style="list-style-type: none"> <li>To provide support and guidance in the use of physical computing, programming, and related technologies.</li> <li>To support students in understanding the use of computational thinking, technological scoping, logic and best practices to realise art and design projects, and solve complex problems using digital tools.</li> <li>To support students in producing screen-based and physical prototypes for interactive, audio, visual and kinetic experiences.</li> <li>To support students in the use of tools and techniques related to physical computing and programming, including but not limited to: <ul style="list-style-type: none"> <li>prototyping with electronics and microcontrollers;</li> <li>through-hole and surface mount soldering and rework;</li> <li>connecting hardware devices and software using standard communication protocols;</li> <li>command line tools;</li> <li>managing and versioning code;</li> <li>accessing and utilising open source code and libraries;</li> <li>the use and integration of A/V equipment.</li> </ul> </li> <li>To take responsibility for the daily running of the Creative Technology Lab technical area, including: <ul style="list-style-type: none"> <li>being available in the areas to assist with student queries;</li> <li>directing students to appropriate resources or other staff members;</li> <li>overseeing timetabling for bookable areas and loans of specialist equipment;</li> <li>working with academic staff and students in classrooms where appropriate</li> </ul> </li> <li>To contribute, as a technical team member, to the planning and development of the Creative Technology Lab technical area, the identification of learning outcomes, including curriculum development, research and commercial activities.</li> </ul>	

- To contribute and collaborate with technical team members as required to ensure the key priorities and levels of service are met successfully, compliance with Health and Safety, maintenance and repairs of equipment, liaising with team members, Technical Coordinator and/or Technical Manager.
- To provide feedback to Course Leaders, Technical Coordinators and/or Technical Managers regarding service levels and student requirements to ensure appropriate adaptations are made and contribute to the revision of standards of service delivery.
- To work at an agreed level within the terms of the glossary of key terms (describing T & L relationships between Technicians and students).
- To contribute to planning, development and delivery of learning activities supporting student learning and research, liaising with Course Leaders and other academic staff informally and formally in Course meetings.
- To deliver and supervise learning activities in the area of physical computing, electronics and programming, providing expert guidance and advice to students, helping students to identify appropriate techniques, technologies and workflows, and providing access to materials, resources and equipment to support learning outcomes.
- To provide formal or informal sessions to students that may include demonstration, instruction with a process/technique and coaching with the development and proficiency of a particular skill, technique or process, in formats such as:
  - project-led one-to-one student support;
  - structured workshops delivered to student groups;
  - informal tutorial sessions with student groups;
  - inductions into software, equipment and processes for students using the Creative Technology Lab technical area.
- To provide detailed feedback to students and contribute critical input to student concept and expressive/creative intention in relation to agreed Course Learning Outcomes.
- To contribute to the project planning and delivery of exhibitions and events within the College including:
  - assisting with setup and testing of supported projects for exhibitions;
  - liaising with academics, students and events teams regarding technical requirements, availability of equipment and health & safety considerations for shows and other events;
  - providing technical support and assistance with equipment for other events (e.g. open days, hosted meet-ups) where needed;
  - supporting students with the documentation of projects for online/virtual showcases.
- To demonstrate a high level of independent responsibility for the diagnosis and resolution of problems and creative/artistic challenges encountered with the execution of that work
- To carry out detailed and extensive research to support the ability to diagnose and resolve problems of a highly technical, complicated nature, that involves testing and debugging scenarios and processes to lead to the successful design and achievement of intended learning outcome/execution of work.
- To take responsibility for and oversee the day to day operation of specified facilities, liaising Technical Coordinator and/or Technical Manager, and ensure the safe use of equipment and facilities.
- To undertake frontline maintenance and repairs liaising with suppliers and contractors to meet statutory and recognised professional procedures and guidelines, as agreed with Technical Coordinator and/or Technical Manager.

- To liaise internally and externally with professionals and recognised practitioners and artists, attend conferences and exhibitions to share and develop ideas, knowledge and expertise that can be translated to support academic and technical learning and research activities.
- To take responsibility for the maintenance of inventories, carrying out risk assessments and appropriate records with regard to equipment, stock lists, ordering of stock, equipment and consumables; servicing and repair of equipment reporting to the Technical Coordinator and/or Technical Manager.
- To provide professional guidance and advice to Technical Coordinator and/or Technical Manager, and assist with the commissioning of new equipment including the delivery and installations of equipment.
- To be involved with the design, production and development of appropriate teaching and learning materials to suit own specific areas of specialist activity and service delivery.
- To perform such duties consistent with your role as may from time to time be assigned to you anywhere within the University.
- To undertake health and safety duties and responsibilities appropriate to the role.
- To work in accordance with the University's Equal Opportunities Policy and the Staff Charter, promoting equality and diversity in your work
- To undertake continuous personal and professional development, and to support it for any staff you manage through effective use of the University's Planning, Review and Appraisal scheme and staff development opportunities.
- To make full use of all information and communication technologies in adherence to data protection policies to meet the requirements of the role and to promote organisational effectiveness.
- To conduct all financial matters associated with the role in accordance with the University's policies and procedures, as laid down in the Financial Regulations.

#### **Key Working Relationships**

- Head of Technical Resources
- Technical Resources Manager
- Technical Coordinator – Creative Technology
- Technical Coordinator – Digital Teaching and Learning
- Creative Technology Lab team members
- Technical staff
- Course staff
- Suppliers and industry partners

#### **Specific Management Responsibilities**

##### **Budgets**

Access to Creative Technology Lab budget

##### **Staff**

None

##### **Other**

Shared responsibility for safety of users and security of equipment in the immediate working environment.

HERA Ref: SICOM Tech 3

Signed: Delia Hamwood

Date of last review: 26 March 2021

(Recruiting Manager)

<b>Person Specification</b>	
Specialist Knowledge/ Qualifications	<p>Postgraduate or undergraduate degree in a relevant field OR equivalent experience.</p> <p>Relevant qualifications include but are not limited to:</p> <ul style="list-style-type: none"><li>• Interaction Design</li><li>• Creative Computing</li><li>• Computational Arts</li><li>• Information Experience Design</li><li>• Software Engineering</li><li>• Computer Science</li><li>• Electronics Engineering</li></ul> <p>Equivalent experience may be demonstrated via a portfolio of work and/or 1+ years in a relevant industry including but not limited to:</p> <ul style="list-style-type: none"><li>• Computational Art</li><li>• Game Development</li><li>• Embedded Systems</li><li>• Creative Technology</li><li>• Science Communication</li><li>• Software or Hardware Engineering</li></ul> <p>Skills essential to the role include:</p> <ul style="list-style-type: none"><li>• Understanding of tools, workflows and practices in working with electronics and microcontrollers</li><li>• Demonstrable knowledge of electronics and circuit design</li><li>• Knowledge of C/C++ programming in the context of physical computing/microcontrollers</li><li>• Knowledge of at least two standard communication protocols (e.g. serial, I2C, DMX, OSC, MIDI)</li><li>• Good knowledge of commercially available sensors and actuators suitable for use with hobbyist development boards (e.g Arduino)</li><li>• Working knowledge of code and version management (e.g. Git).</li><li>• Understanding of health and safety and risk management in the workplace.</li></ul>
Relevant Experience	<p>Experience of teaching and/or demonstrating techniques related to electronics or programming.</p> <p>Experience of working in Windows, Linux and macOS at both GUI and CLI levels.</p>

	<p>Experience in physical computing for creative applications (e.g. Arduino, Raspberry Pi)</p> <p>Experience in any of the following areas would be desirable but not essential:</p> <ul style="list-style-type: none"> <li>• Networked applications (e.g. Node.js, web APIs).</li> <li>• Creative coding languages/frameworks (e.g. Processing, p5.js, openFrameworks).</li> <li>• Image, video or sound manipulation (e.g. Max/MSP, TouchDesigner).</li> <li>• Projection mapping (e.g. MadMapper, Resolume).</li> </ul>
Communication Skills	Communicates effectively orally, in writing and/or using visual media. Able to explain complex technical concepts to a diverse audience in an inclusive and accessible way.
Research, Teaching and Learning	Uses effective teaching, learning or professional practice to support excellent teaching, pedagogy and inclusivity.
Planning and Managing Resources	Effectively plans, prioritises and organises work to achieve objectives or projects on time.
Teamwork	Works collaboratively in a team and where appropriate across or with different professional groups.
Student Experience or Customer Service	Makes a significant contribution to improving the student or customer experience to promote an inclusive environment for students, colleagues or customers.
Creativity, Innovation and Problem Solving	Identifies innovative and creative solutions to resolve problems.

The application form sets out a number of competence questions related to some of the following selection criteria. Shortlisting will be based on your responses to these questions. Please make sure you provide evidence to demonstrate clearly how you meet these criteria.

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