

**NOTE:** This job description does not form part of the employee's contract of employment but is provided for guidance. The precise duties and responsibilities of any job may be expected to change over time. Job Holders should be consulted over any proposed changes to this job description before implementation.

**JOB TITLE:** Fabrication Lab Assistant Technologist: Digital Process Developer

**GRADE:** NG3

**REPORTS TO:** Fabrication Lab Director

**PURPOSE:**

To assist in the development and maintenance of the digital tools, software, and IT infrastructure in the Fabrication Lab, provide technical support to colleagues, students and external clients/users, and assist in the delivery of Fabrication Lab activities (e.g. teaching, research, CPD, and knowledge exchange activities).

**PRINCIPAL ACCOUNTABILITIES**

- 1) To work as a member of the multi-disciplinary Fabrication Lab team, assisting in the development, and maintenance of the digital tools, software, and IT infrastructure in the Fabrication Lab.  
This includes:
  - a) To develop and configure existing and new systems to support an efficient and flexible working environment for colleagues and students, and/or to support the Labs research activities.
  - b) To frequently update software solutions across the lab to ensure a secure and up to date environment.
  - c) To monitor the IT infrastructure and mitigate and/or solve any arising difficulties.
  
- 2) To provide technical support to colleagues, students and external clients/users. Such technical support includes (but is not limited to):
  - a) Over-seeing the safe and correct use of tools by appropriately trained students and colleagues, providing additional ad hoc support and advice about safe and best practice as required;
  - b) Supporting specific software skills and digital fabrication techniques relevant to the post-holder's specialisms;
  - c) Assisting with the development and implementation of new and innovative digital and traditional training materials;
  - d) Assisting with the innovation of new digital processes and techniques specific to the Lab and its users;

- e) Assisting in the preparation and installation of internal/external exhibitions and events to showcase work and projects fabricated in the Lab;
- 3) To provide basic demonstration of the safe and correct use of digital tools and equipment on both an ad-hoc basis and during scheduled practical sessions throughout the year, maintaining appropriate records that this demonstration has taken place.
- 4) To assist in keeping the designated technical service area in a clean, safe and fully operational condition. To assist, as a member of the Lab team, in the regular inspection and basic maintenance of equipment in the designated technical service area, to ensure that it conforms to required Health & Safety standards.
- 5) To participate in and contribute to team meetings. To undertake relevant continuous professional development activities to maintain up to date knowledge and skills in the designated specialism.
- 6) To undertake any other duties within their competence and appropriate to the grade, as required by the line manager or their nominee.

## **CONTEXT**

The Fabrication Lab is a specialist Lab and an innovative new centre for teaching, research and knowledge exchange within the College for Design, Creative and Digital Industries. It has evolved over the past eight years to combine and unify diverse workshops, labs and other areas previously part of the Faculty of Architecture and the Built Environment. The Lab has benefited from multimillion pound investment and now offers state of the art tools and digital technologies as well as exemplary, purpose-built spaces and an excellent working environment. The purpose of the Lab is to teach and research the technology ecosystem for design and construction of the built environment, and to enable the manufacture and testing of models, materials, details and 1-1 prototypes, using a variety of materials, processes and contemporary digital technologies. It aims at facilitating speculation, experimentation, and innovation of new ideas and technologies for architectural design and construction.

Facilities within the Lab include traditional machine shops for working with wood and metal, as well as a wide variety of contemporary digital fabrication tools and technologies ranging from 3D printers through CNC mills and routers to 7-axis robotic arms. It includes a traditional casting studio as well as equipment for material and structural testing. The Lab equally encompasses digital capture, representation and physical printing. It has numerous tools from 3D scanners to a photographic studio including a specialist artificial sky and heliodon for the environmental analysis of architectural designs using physical models. The lab has an extensive virtual, augmented and mixed reality lab, established in partnership with the University's School of Computing and Engineering.

The facilities primarily support students and colleagues from the School of Architecture + Cities, though it is open to use by others across the College. It is used in particular by the School of Applied Management, whose construction and surveying courses make extensive use of the material testing machines. As well as taught courses, the Lab also has won numerous grants to fund self-generated research and teaching projects, and is building a portfolio of research work and an international reputation.

Access to the Lab is controlled, and available only when Lab colleagues are present to supervise. The emphasis of the Lab however is on self-fabrication, aiming at empowering students and colleagues through instruction on how to use the equipment and technologies, so that Lab-Users can create their own work and become self-directed, responsible makers. In addition to maintaining and improving the facilities, the principle role of Lab colleagues is therefore to instruct and assist others with their learning, including the development of new teaching materials and processes, and to oversee and encourage users' own efforts, rather than to fabricate for them. The Lab frequently operates as an extension to the design studio, with users' responsible for developing their own work in iterative cycles going from studio to Lab. Given the hazardous nature of some of the process involved, the Lab differs from the studios providing closer supervision by Lab Colleagues, and a level of professionalism analogous to the construction industry. High standards of safety and proper practice are maintained at all times.

Given the diverse nature of the facilities, and the diverse scope of activities of the Lab including teaching, research and knowledge exchange, the Lab relies on a multi-disciplinary team, including academic and research as well as technical colleagues, working in conjunction with a large number of trained student Lab Assistants. The Lab requires colleagues with a wide range of skills and a keen interest in working with others from different backgrounds in order to share knowledge, to help support current activities and to develop new and innovative uses for the Lab in order to fulfil its exciting and rapidly expanding potential.

The post-holder is expected to work closely with colleagues within and outside the section to maintain the highest quality of technical support and provide the best possible experience to College users (primarily students and academic and research colleagues) in the delivery of the College's core activities. The post holder will be expected to adopt a customer-centred approach and have a commitment to personal and professional development, demonstrating this commitment through undertaking regular continuous professional development activities.

The University requires all post holders to have an understanding of individual health and safety responsibilities and an awareness of the risks in the work environment, together with their potential impact on both individual work and that of others.

## **DIMENSIONS**

- The post-holder has no line management or budgetary responsibility but works as part of a multi-disciplinary team of 10 technical, academic and research colleagues and up to 20 trained student Lab Assistants in supporting the core activities of the College.
- The post-holder is a user of the equipment/physical resources in the designated technical service area;
- There may be restrictions on taking annual leave during busy periods and during term time.

## PERSON SPECIFICATION

| <b>Essential Criteria</b>   | <b>Desirable</b>   |
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| <b>Qualifications</b>   |  |
| Educated to A-Level, or equivalent vocational qualification or has equivalent level of knowledge gained through professional experience   | Educated to degree level in Computer Science or demonstrable equivalent level of professional experience   |
| <b>Knowledge and Experience</b>   |  |
| <p>Knowledge of and skills for working with a variety of software using sophisticated and contemporary equipment</p> <p>Experience of working successfully as a member of a customer-facing team of colleagues</p>                          | <p>Knowledge of Game Engines (e.g. Unreal Engine)</p> <p>Experience with VR/AR equipment</p> <p>Experience with IoT and embedded systems devices (e.g. Arduino, Teensy etc.)</p> <p>Knowledge of web technologies (JS, HTML, CSS, Vue.js, Node.js, PHP)</p> <p>Knowledge of network technologies</p> <p>Previous experience in a Higher Education or commercial environment</p> <p>Experience of demonstrating equipment to groups</p> |
| <b>Aptitude and Abilities</b>   |  |
| <p>Ability to quickly and independently learn new skills.</p> <p>Capable of combining different technologies to solve real world problems.</p> <p>Excellent IT skills including word processing, spreadsheets, and database management.</p> |  |

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| <p>Excellent interpersonal skills with the ability to communicate information effectively (either verbally or in written form), and articulate complex issues in a manner which is clear and concise.</p> <p>Excellent planning skills, with attention to detail and the ability to meet deadlines and work well under time constraints and other pressures.</p> <p>Ability to work both independently and in a team environment</p>  |  |
| <p><b>Personal attributes</b></p>   |  |
| <p>A customer-focused approach, and the ability to demonstrate this approach in personal working practices</p> <p>A commitment to continuous personal professional development</p> <p>The flexibility to adapt in an ever changing sector</p> <p>Fully committed to contributing to a stimulating learning and working environment, which is supportive and fair, based on mutual respect and trust, and in which harassment and discrimination are neither tolerated nor acceptable.</p> |  |