

Research Technical Supervisor – Mechatronic Systems

REQ210265

As part of the University's ongoing commitment to redeployment, please note that this vacancy may be withdrawn at any stage of the recruitment process if a suitable redeployee is identified.

Job Description

Job Grade: Technical Services Grade 6

Job Purpose

Working within the electronics workshop the role holder will work with other technical staff across the school to provide support and advice on mechatronics related research projects. You will bring specialist expertise in mechanical, electrical, control systems and computer engineering, i.e. mechatronic systems to the electronics workshop. The role holder will complement a team of highly skilled technical staff in supporting Undergraduate (UG) and Postgraduate (PG), and Research projects within the School and will supervise and coordinate our technical support work in this research area. They will provide expert technical support in the form of advice of manufacturing and system integration principles. In addition, the role holder will be expected to support the Electronics Supervisor with input into taught session during times of high student and teaching demand. The post holder will provide specialist support to academic colleagues engaged in research activities helping in the design and manufacture of proof of principle prototypes and demonstrator systems.

The successful candidate will work closely with the research technical staff across the school by taking day to day responsibility for the production and coordination of both research and relevant student projects ensuring that components/systems are sourced, manufactured, built and integrated in a timely manner. You will oversee the technical Instruction in this expertise area, helping with the design, development, build, test and calibration of electro-mechanical equipment, systems, dedicated instrumentation, and research rigs. You should be conversant with the review and preparation of CAD drawings ensuring the manufacturing process and materials used are appropriate. It is envisaged that you will also undertake instructional work as required to support teaching activities within the electronics laboratory other area of the school including the STEMLab facility. You will support, promote and participate in the University's people strategy, in your staff development and continuous professional development (CPD) including succession planning.

All professional and support staff are responsible for providing students with the best learning experience possible. Providing this learning experience is pivotal to our continued success in providing our graduates with the foundations needed to build a productive and rewarding career.

Job Duties

- You will be responsible for liaising with research staff (academic and technical) providing technical support and instruction in the development and design of electro-mechanical systems and mechatronic devices including robotic and other intelligent automation systems. This will include the delivery of a complete technical service supporting teaching and research activities throughout the school. You will be one of the main points of contact for Researchers requiring technical support for mechatronic devices (inc robotic) and systems. You will provide supervision to research funded technical staff ensuring that they deliver the required support to both academic staff and students.
- Engage with academic colleagues to develop an understanding of their research requirements and intended outcomes, including supporting PhD students. You will work with the Electronics Supervisor to support the broad spectrum of taught UG and PG modules; including undertaking the planning and delivery of practical

laboratory elements to support student learning experience and develop their understanding of the application of mechatronics and robotic system principles.

- To support/advise undergraduate students/postgraduate researchers in the configuration of mechatronics and robotic systems, applying practical skills in project or independent sessions. Overseeing their execution of both mechanical and electronic systems to ensure the safe and accurate operation supporting their independent development.
- To support Academic colleagues engaged in research projects to collectively conceive and generate original ideas and innovative solutions, to the design and build of specialist testing apparatus. To work with colleagues from other areas of the school in the delivery of these research projects.
- To provide training, support and supervision of apprentices within the electronic workshop. Working with the Electronics Supervisor to oversee their work, plan their development and progression and supporting their learning experience.
- To be responsible for ensuring that risk assessments and standard operating procedures are in place for all mechatronic and robotic equipment, specifically for equipment that has been developed in house. To ensure strict adherence to established School and University Health & Safety policies and practices within all laboratories and workshops where electro-mechanical or robotic devices are used.
- To work closely with the academic staff to ensure that our Laboratories and workshops meets the school's programme of expansion, succession planning. To get trained on the operation of equipment within other workshop and lab areas as may be appropriate. To assist in the sourcing of materials for research projects including bespoke equipment and tooling for research activities.
- To work closely with the Electronics and Mechanical Supervisors to plan staff resourcing and succession planning to ensure that sufficient support is available for UG and PG and research project delivery from an electro-mechanical aspect. To ensure that cover is always provided, particularly in the delivery of teaching and projects at critical times, whilst still providing Research Support cover.
- To develop and deliver dynamic and engaging demonstrations at regular applicant School Visit Days and University Open Days, to inspire the imaginations of potential students and their parents.
- To participate fully in the School's PDR (Performance and Development Review) Scheme, identifying and agreeing developmental opportunities for personal and professional development and in response to changing needs within the School.
- Assist the Electronics Supervisor with the development of the school technician training matrix and create area or team matrices. Develop training plans for the technical staff, identify providers if not available in-house.
- Visiting external test facilities/customers/industrial sponsors and technology exhibitions, as required, for the provision of field support and technology scoping.
- To provide advice and guidance to research staff in the procurement of materials, tools, parts, consumables and maintenance/servicing of equipment.
- Work with your line / task manager to enhance efficiency by undertaking any relevant training requirements that are needed to enhance your own development and skills for you to be more effective in supporting Research projects within the School.
- To work with the Technical Supervisors from across the school to help in the development of mechanical students understanding of electro-mechanical and robotic systems.

Wider Technical Duties & Responsibilities

- To work closely with the other technicians and supervisors to improve working practices (Best Practice) to ensure that service levels are identified and reviewed effectively.

- To oversee and if necessary, undertake the manufacture, assembly and installation of equipment and rigs from drawing and verbal instructions for research staff.
- To assist with technical duties in other areas, if requested by the Technical Resource Manager, or the Operations Manager, due to variations in workload, staff shortages or temporary re-organisations as required to ensure business continuity.
- Liaise with other University Schools/Departments and outside contractors with regard to layout, installation, modification, upgrade, repair of plant and equipment.
- To work closely as a member of the wider electronics team to support relevant academic staff and Technical Resources Manager in planning the future development of the laboratory and teaching activities. To be able to identify opportunities for improvements in these areas.
- The requisition of miscellaneous materials, parts, and consumables to ensure that equipment and teaching activities can be conducted.
- To perform any duties as reasonably required by the Technical Resource Manager.

Behavioural Expectations

- To maintain an active approach to CPD (Continual Professional Development). Participate fully in the School's PDR (Performance and Development Review) Scheme, identifying and agreeing developmental opportunities for personal and professional development and in response to changing needs within the school.
- To ensure relationships are maintained and developed at all times, by using Relations Management techniques, specifically, cost, quality and delivery or services provided, to be the solution provider. To build a reputation of excellence and professionalism.
- To support colleagues in other technical teams; to develop broader skills to deliver taught/ supervised sessions throughout the campus wide satellite facilities supported by the Wolfson School thus supplementing the School's resource management.
- To fully engage with School life, by participating in university Open Days, School Visit Days and other outreach activities. Participation will include but not restricted to, the setting up and dismantling of events, giving demonstrations, and act as a Wolfson School ambassador giving help and guidance.
- A flexible approach to working hours is required due to the occasional evening and weekend working requirements of the position.

Performance Measures

- Performance measures will be used to ensure delivery and performance are maintained. The PDR process will outline specific measures; however, the following examples could be used in the first instance.
- To satisfactorily pass Health and Safety Audits and House Keeping Audits within the specific area of responsibility.
- To ensure facility availability, by carrying out tasks with the utmost efficiency and quality, planning maintenance, and breakdown management.
- Overseeing refurbishment projects to ensure minimal disruption to staff and students.
- The on-going development of area of responsibility, such as layout, process, workflow etc.
- Continual Personal Development (Expectation of 5 days per year)
- Ongoing planned development of each specific area. (Learning, Equipment, Process)

- Efficient use of flexible working within the area of responsibility to ensure that research activities are delivered on time and to budget.
- Skills development, Multi-functional ability (Target to achieve three key functional areas Learning, Equipment, Process)

Points to Note

The purpose of this job description is to indicate the general level of duties and responsibility of the post. The detailed duties may vary from time to time without changing the general character or level of responsibility entailed.

Special Conditions

Research and Teaching Laboratories, Electrical and Mechanical workshops are located in several buildings across the Wolfson School on the Loughborough University Campus. Due to the specialist nature of this position, there is a large proportion of autonomy in performing this role and therefore significant self-management will need to be demonstrated.

The workshops and laboratories areas normally remain open and appropriately staffed until 6pm to accommodate timetabled classes and during project periods to support students effectively.

There may be opportunities for accompanying students on industrial visits, however this is not a primary job function, therefore will be by volunteering only.

The Wolfson School has vehicles used to transport equipment across campus; therefore, volunteering to become a registered driver will be welcomed.

All staff have a statutory responsibility to take reasonable care of themselves, others and the environment and to prevent harm by their acts or omissions. All staff are therefore required to adhere to the University's Health, Safety and Environmental Policy & Procedures.

All staff should hold a duty and commitment to observing the University's Equality & Diversity policy and procedures at all times. Duties must be carried out in accordance with relevant Equality & Diversity legislation and University policies/procedures.

Successful completion of probation will be dependent on attendance at the University's mandatory courses which include Respecting Diversity and, where appropriate, Recruitment and Selection.

Organisational Responsibility

Reports to: The Technical Resource Manager (line manager)

Task Manager: The Electronics Workshop Supervisor (for all teaching and student project activities)

Responsible for: Ensuring that Researchers, Academic staff and students have adequate information / support within the electronics workshop for Mechatronics and Electro-Mechanical Systems.

Person Specification

Your application will be reviewed against the essential and desirable criteria listed below. Applicants are strongly advised to explicitly state and evidence how they meet each of the essential (and desirable) criteria in their application. Stages of assessment are as follows:

- 1 – Application
- 2 – Test/Assessment Centre/Presentation
- 3 – Interview

Essential Criteria

Area	Criteria	Stage
Experience	Served a recognised Engineering apprenticeship with substantial experience in electronics, mechanical engineering, control systems, robotics or mechatronics environment.	1,3
	Designing, developing and / or enhancing electro-mechanical systems and mechatronic devices.	1,2,3
	Proven track record of managing / supervising a skilled technical workforce.	1,3
	Articulate with strong verbal communication skills and the ability to explain engineering principles and test the understanding of an inexperienced audience	1,3
	Significant experience of designing, developing and enhancing electro-mechanical systems and mechatronic device using Computer Aided Design (CAD) software packages and electronics design software <i>such as</i> NX 3D Modelling, Altium Designer, Fusion 360, NI Multisim, KiCad EDA, Autodesk EAGLE, DipTrace, Ultiboard, ExpressPCB Plus.	1,3
Skills and abilities	Previous experience working with students and / or researchers with the ability to work as part of a team with excellent interpersonal skills in a technical service providing environment.	1,3
	Ability to work with efficiency and accuracy while prioritising workload to meet tight deadlines.	1,3
	Highly professional at all times with the ability to lead and gain buy-in from colleagues.	1,3
	A natural communicator with a passion for explaining complex ideas and procedures to others.	2
	Demonstrable multi-disciplinary abilities and flexible practical skills.	1,2,3
	Ability to work independently applying own initiative, with minimal supervision.	1,3
	High level of computer-based skills including use of MS Office, Outlook, Excel etc. and the ability to quickly learn bespoke software packages.	1,3
Training	Evidence of Continual Professional Development (CPD) together with a willingness to undertake training as appropriate and to adopt new procedures in line with the changing needs of the business.	3
Qualifications	BTEC Higher National Certificate / Diploma in an engineering subject.	3
Other	Proven knowledge and a working understanding of current Health, Safety and Environmental legislation.	3

Desirable Criteria

Area	Criteria	Stage
Experience	Previous experience of working in a University Lab, electronics, mechanical workshops, control systems, manufacturing or research and development workshop.	1,3
	Previous experience of working in a mechatronics or robotics environment with the ability to design develop and enhance electro-mechanical systems.	1,3
	A proven track record of working with companies on bespoke mechatronics or robotic systems.	1,3
Skills and abilities	Proven ability to apply engineering principals to design and create working drawings, specifications, operating procedures	1,3
	Proven track record of manufacturing and assembling new equipment within a manufacturing environment.	1,3
	Creating software and procedures to control automated lab or research equipment	1,3
	Integrate electrical and mechanical systems to enhance research or taught equipment.	1,3
	A fast learner with the desire to enhance own personal skills set and knowledge base within the Wolfson school laboratory and workshop areas.	1,3
	Experienced with the collaborative or industrial robotic programming and integration of robots into manufacturing systems.	1,3
Qualifications	BEng Mechatronic or Robotic Engineering or equivalent	1

Conditions of Service

The position is **FULL TIME** and **OPEN-ENDED**. Salary will be on **Technical Services** Grade 6, £31,406 - £40,927 per annum, at a starting salary to be confirmed on offer of appointment.

The appointment will be subject to the University's normal Terms and Conditions of Employment for Academic and Related staff/Operational and Administrative staff, details of which can be found [here](#).

The University is committed to enabling staff to maintain a healthy work-home balance and has a number of family-friendly policies which are available at <http://www.lboro.ac.uk/services/hr/a-z/family-leave-policy-and-procedure---page.html>.

We also offer an on-campus nursery with subsidised places, subsidised places at local holiday clubs and a childcare voucher scheme (further details are available at: <http://www.lboro.ac.uk/services/hr/a-z/childcare-information---page.html>)

In addition, the University is supportive, wherever possible, of flexible working arrangements.

We also strive to create a culture that supports equality and celebrates diversity throughout the campus. The University holds a Bronze Athena SWAN award which recognises the importance of support for women at all stages of their academic career. For further information on Athena SWAN see <http://www.lboro.ac.uk/services/hr/athena-swam/>

Applications

The closing date for receipt of applications is **12 December 2021**.