



Job Summary

Job Title: STAR Accelerator Mechanical Prototype Manufacturing Engineer

Grade: 8

Salary: £44,045 to £49,553 per annum

Department: College of Science and Engineering

Hours/Contract: Full time, open ended subject to fixed term funding. Funding is available to 31 October 2022

Reference: 1609

Role Purpose

The role will be focused on the provision of technical, precision manufacturing, rapid prototyping and 3D Printing (additive Manufacturing) expertise, knowhow and delivery, including manufacturing facility operation in order to aid local SME industry (manufacture of one-off items).

Using a variety of tools and software, the Engineer will lead and deliver the metrology, metal precision, rapid prototype and additive manufacturing aspects of the STAR (Space Technology Applications from Research) Accelerator project, part-funded by European Regional Development Fund (ERDF). The local SME industry will encompass a wide range of artefacts and sectors including Life Sciences/Biotech, transport, space instrumentation, energy, Food and Drink and creative industry sectors. The STAR Accelerator technical team will consist of three posts: this post; a systems designer; and an electronic engineering post; supported by a business manager and admin support.

Alongside the technical role, an important aspect of the role will be to proactively build and maintain research, business and industry links and activity which are aligned with the University's space and earth observation and engineering expertise and its Space Park Leicester project, in order to ensure the successful delivery of the ERDF and University outputs and sustainability of the STAR Accelerator Project beyond the current funding stream.

Main Duties and Responsibilities	% Time
<p>Operational Expertise</p> <ul style="list-style-type: none"> Apply state-of-the-art expertise in precision, rapid prototype and ideally additive manufacturing* to aid product design and manufacture (and its application for assessment of a wide range of artefacts, structures, and engineering products) to develop the briefs scoped by the SMEs, Academic Lead and Business Manager into well-designed solutions. (*or be willing to learn and train in additive manufacturing techniques and equipment). The aim is to produce bespoke results/applications for the STAR Accelerator clients and centre users, this will involve: <ul style="list-style-type: none"> Leading the precision, rapid prototype and additive manufacturing solutions to enable STAR Accelerator to design, prototype and manufacture of components using new materials and products. The supervision and/or delivery of technical precision, rapid prototyping and additive manufacturing expertise based services in situ and/or at clients' business premises as appropriate. 	60





- The operation and programming of engineering machining equipment, including CNC machines and Additive Manufacture machines.
- The development of precision, rapid prototype and additive manufacturing solutions to inform designs of artefacts and products from CAD or from the 3D printers.
- Metrology and analysis, in conjunction with others, to compare against CAD design models and drawing requirements.
- Operation of the relevant STAR Accelerator suite software, including acquiring, storing, post-processing, interpreting and summarising data to produce technical reports/analyses.
- The identification, research and development of new opportunities, methods and work practices to extend the range of services by STAR Accelerator generally and specifically the range of applications of product development.
- Mentoring technical staff working in the STAR Accelerator with guidance from the Academic Director and Leicester Space Park CEO.
- Production of a range of documents and designs for different audiences (e.g. technical designs and reports for commercial clients and scientific summaries for inclusion in academic and technical papers).

Business Development

30

- Help recruit and support local SMEs in order to build a strong business cluster with collaborative opportunities.
- Help develop and deliver innovation support activities for the benefit of SMEs and University graduates in order to deliver the STAR Accelerator project successfully, to target, on time and budget.
- Contribute to the sustainability of the STAR Accelerator project by helping build industry networks and partnerships, to develop new sales and ensure a flow of research income to the University.
- Design and deliver, individually and as part of a team, precision and additive manufacturing and technology demonstrations workshops and skills development sessions to local industry in order to disseminate knowledge and enable new applications of research and the utilisation of latest machinery and manufacturing techniques.
- Contribute technical expertise to the production of presentations, publicity material, and website content, from suitably commercially non-sensitive projects and case studies you have worked on.
- Work closely with the Business Manager and STAR Accelerator team in order to shape the strategic direction of STAR Accelerator applications and to establish effective operations and systems to comply with the requirements from the University and the grant awarding bodies.
- Support the management team and the health and safety aspects of the STAR Accelerator project.





<ul style="list-style-type: none"> Identify and match academic research strengths with local SME needs from across the University by liaising with other innovation/knowledge exchange projects across the University. Work closely with Academic Director and Business Manager to achieve this. <p>Resource Management</p> <ul style="list-style-type: none"> Manage allocated resources effectively (orders, goods receipt, invoice verification and asset management modules are processed and accurate records are maintained) so that objectives are delivered within budget. Maintain the precision and additive manufacturing hardware and software in optimal working conditions, within the budget and timescales of STAR Accelerator. 	10
Internal and External Relationships	
<p>Work closely with and as part of the STAR Accelerator team to deliver the STAR Accelerator project business plan.</p> <p>Meet regularly with the STAR Business Manager and other STAR Accelerator staff to:</p> <ul style="list-style-type: none"> Discuss the range of STAR Accelerator services offered to clients, on-going contracts, and new prospects. Feed in technical details of suitable project plans at the pre-contract stage. Update the Business Manager on the progress of the operations on the workshop floor and in the office across the range of parallel projects being undertaken at STAR Accelerator. <p>Meet regularly with the STAR Accelerator Business Manager, Head of Regional Business Engagement and other University of Leicester academics and technical staff associated/seconded to STAR Accelerator to:</p> <ul style="list-style-type: none"> Discuss enhancements required to the hardware, software, and working practices at STAR Accelerator Discuss STAR Accelerator project demand Support the longevity and the widening scope of the STAR Accelerator activities to new markets. Attend on-site and off-site meetings organised by the Business Manager and the Director with potential clients, to offer manufacturing expertise and support in scoping new activities or in reporting on existing activities. Meetings will be with technical staff and may include Business Owners, Managing Directors and Senior Staff in SMEs. Liaise regularly, as required, with the University of Leicester purchasing team for procuring consumables and minor equipment in support of the daily operations at STAR Accelerator. Liaise quarterly with the University of Leicester safety team, on the upkeep of safety at work. Liaise as appropriate with the University of Leicester IT services, to ensure the software STAR Accelerator relies upon is maintained effectively by IT services. Liaise with IT services on data access and data security of clients. Liaise regularly, as required, with University of Leicester technical and engineering staff within the Physics and Astronomy and Engineering schools for 	





advice and where appropriate joint work on projects.

- Meet technical staff operating in the commercial and additive manufacturing field under the appointee's leadership.
- Provide demonstrations of the equipment as required, seminars on precision and additive Manufacturing solutions, and workshops to Industry.
- Support the activities of junior research staff and university students seconded to STAR Accelerator.
- Participate in scientific and technical paper writing and scientific dissemination with academic staff from the University of Leicester and from other educational institutions that may become affiliated with the Centre.
- Liaise daily or as appropriate with the Space Park Leicester and the Innovation Hub to coordinate the physical access to STAR Accelerator by clients, staff, and stakeholders. Coordinate the use of any shared equipment within the complex with the users of the centre.
- Liaise with colleagues in SPRINT, the Research and Enterprise Division and those based in the Leicester Innovation Hub.
- Liaise with LLEP Business Gateway, Business intermediaries and support organisations, e.g. FSB, IOD, Chamber of Commerce, Food Park.

Planning and Organising

Planning and organising own workload and time along with technical staff working in the Centre, working around the schedule of STAR Accelerator stakeholders, the Business Manager, the Director and affiliated academic staff. Prioritise and organise the work schedule of the STAR Accelerator facilities and technologies. Plan the provision of services and external resources for specific projects. Plan and organise the maintenance of the key assets of STAR Accelerator.

Plan and organise delivery of multi-faceted innovation support including specialist workshops and the successful operation of the STAR Accelerator facilities.





Qualifications, Knowledge and Experience

Essential

- A recognised engineering apprenticeship and significant, relevant post-apprenticeship experience and trade qualification to at least level 3 and HNC Engineering Manufacture Qualification*
- Extensive experience of operating a wide range of equipment used in manufacture*
- Experienced CNC operator and programmer*
- Track record of delivering manufacturing services in at least one of the following sectors: aerospace, automotive, space, instrumentation, life sciences, energy or transport*
- Willingness to train in use of precision and additive manufacturing techniques
- Experience of using Computer Aided Design software packages*

Desirable

- A recognised engineering apprenticeship and a significant, relevant post-apprenticeship experience and trade qualification to at least level 6 or HND Engineering Manufacture Qualification
- Or 1st class or 2:1 undergraduate degree in engineering or physical sciences
- Experience of precision and additive manufacturing challenges in at least one of the following sectors: the automotive; transport; space instrumentation; life sciences; and energy sectors
- Experienced CMM operator and programmer
- Track record of work in a prototype development environment
- Experience of using design tools and software used to deliver commercial and technical designs and solutions, as evidenced by reports, scientific publications, and/or a portfolio of past projects in the work place*
- Competence in additive manufacturing techniques for prototyping and manufacturing
- Evidence of supervision/co-supervision of technical staff
- Membership and/or evidence of activity with professional engineering institutions (preferably chartered engineer registration)
- Experience of delivering innovation support programmes to SMEs



Skills, Abilities and Competencies

Essential

- A complete range of mechanical workshop skills including competency in precision machining and novel manufacturing techniques such as electrical discharge machining (spark erosion)*
- Ability to analyse and interpret complex technical data (including metrology data) and give an expert opinion to STAR Accelerator clients and other team members*
- Ability to execute complex workflows involving multiple clients, both internal and external
- Competence in numerical and IT skills
- Excellent interpersonal skills including communication, good team working and leadership skills
- Ability to drive to customers' business premises*

Desirable

- Competent rapid prototyping and/or additive manufacturing hardware and software
- Experience in CAD use (AutoCAD, SolidWorks, NX)*
- Ability to write research grant proposals and project proposals with industry
- Workshop delivery and business support to SMEs
- Ability to build strong relationships with core stakeholders, business intermediaries and senior business owner managers

****Criteria to be used in shortlisting candidates for interview***

Criminal Declaration

If you become an employee, you must inform your manager immediately, in writing, if you are the subject of any current or future police investigations/legal proceedings, which could result in a criminal offence, conviction, caution, bind-over or charges, or warnings.

VITAL

The University encourages all staff to live our [VITAL values](#) which are:
Valuing People, Innovators, Together, Accountable, Leaders.

Equality and Diversity

We believe that equality, diversity and inclusion is integral to a successful modern workplace. By developing and implementing policies and systems that challenge stereotypes across all aspects of our work, we have a culture that recognises and values the diverse contributions of our staff which benefits everyone. Our strong values of inclusivity and equality support our efforts to attract a diverse range of high quality staff and students, and identify our University as a progressive and innovative workplace that mainstreams equality, diversity and inclusion.

