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Job Description

Post title: **Teaching Fellow Manufacturing & Materials**

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Author: Dr Andrew R. Hamilton

Standard Occupation Code: 2311 – Higher education teaching professionals

School / Department: Engineering / Mechanical Engineering

Faculty / Directorate: Faculty of Engineering and Physical Sciences

Job Family: Education, Research and Enterprise (ERE)

Grade: Level 4

ERE Pathway (if applicable): Education

Post reporting to: Academic Lead of the Additive Materials and Structures Research Laboratory (AMSRL) Facility

Post line report(s): none

Post base location: Highfield

Job purpose: Education: Building experience and competence in scholarly educational practice, with appropriate guidance, support and supervision. To teach manufacturing and materials content at undergraduate and postgraduate level, specifically as related to the Additive Materials and Structures Research Laboratory (AMSRL) Facility.

Leadership, Management and Engagement:

To operate and maintain AMSRL manufacturing capabilities and to characterise resulting materials, building up an understanding and database of material characteristics and performance (especially mechanical) by using complementary University facilities.

To support research and education activities relating to the AMSRL Facility

To be responsible for coordinating and conducting safety training and risk assessment activities.

Planning own work and contributing effectively to leadership, management and engagement activities, with appropriate guidance, support and supervision.

## Key accountabilities and indicative time allocation:

1. **45%**

**Education Contribution**:

* Prepare and deliver effective, scholarly education activities within established modules and programmes of study.
* Select and apply appropriate teaching methods, drawing on applicable guidance and training, to achieve defined learning outcomes.
* Provide specialist technical advice and support for manufacturing and materials activities in the AMSRL, liaising with faculty safety officers, technicians, researchers, and students, advising on experimental design and procedures.
* Challenge thinking, foster debate, promote active learning and develop the ability of students to engage in critical discourse and rational thinking.
* Demonstrate inclusive and flexible teaching practices. Identify and address individual learning needs.
* Provide advice and support to students in a timely and effective manner, including as a Personal Academic Tutor.
* Mark assessments and provide constructive feedback to students.
* Continually update knowledge of taught specialisms to ensure educational practice is informed by advances in knowledge, insight and understanding in the underlying subject area.
* Continually update knowledge of best practice to ensure educational activities are scholarly.
* Refine own teaching practice by reflecting on teaching design and delivery, obtaining and analysing feedback, participating in peer review and engaging in appropriate continuing professional development.
* Contribute to the design of curricula that are academically excellent, coherent and intellectually challenging.
* Collaborate and network productively with colleagues in own and other departments, disciplines and/or organisations.

1. **20%**

**Leadership, Management and Engagement Contribution**:

Building on the Leadership, Management and Engagement contributions inherent in other Level 4 activities:

* Plan and prioritise own work effectively.
* Undertake defined tasks and contribute effectively to team, department or School-level management, engagement, administration or project work.
* Working with the academic lead, manage or oversee the budget of the AMSRL and contribute to short and medium-term resource planning processes. Advise on future resource requirements within own area.
* Contribute to short-term and medium-term planning.
* Develop an understanding of School, Faculty and University strategies and objectives.
* Contribute to the wider work of the Faculty and University through effective participation in working groups and committees (e.g., Equality, Diversity and Inclusion committees and self-assessment teams, Health and Safety committees, Research Ethics committees etc.).
* Advise and assist colleagues and students.
* Support and help ensure the health and wellbeing of colleagues.
* Mentor colleagues and support their development.
* Line manage or supervise staff, as appropriate.
* Effectively engage in probation, appraisal, career development and continuing professional development activities.
* Contribute to student recruitment activities.
* Help prepare for and/or participate in visit days, open days and public engagement activities
* Use discretion and judgement to select from or adapt existing processes and procedures to achieve outcomes.

1. **10%**

**Health and Safety**

* Manage ASMRL activities so as to maintain a safe working environment for all users, by ensuring that current safety regulations/policies and good practices are followed and by ensuring cleanliness and tidiness.
* Prepare and advise on risk assessments for the laboratories and for specific activities. Monitor and maintain appropriate records and reports to meet internal and external requirements (e.g., audit and compliance reports, service level agreements, health and safety records).

1. **15%**

**Research Contribution**:

* Building research skills, experience and networks, with appropriate guidance, support and supervision. Work is typically focused on a personal programme of research or contributing to wider programmes of research.
* Develop knowledge and understanding of research methodologies (e.g., testing, analysis, interpretation, critical evaluation); select and apply these effectively.
* Contribute to the effective co-creation, sharing of and engagement with research and research findings by a range of audiences (e.g., academic peers, practitioners, policymakers, publics), using a range of methods (e.g., peer-reviewed publications, conferences, [public engagement](https://sotonac.sharepoint.com/sites/CareerPathways/SitePages/Glossary.aspx#public-engagment3), outreach, media releases).
* Ensure that [research outputs](https://sotonac.sharepoint.com/sites/CareerPathways/SitePages/Glossary.aspx#research-outputs) are findable, accessible, interoperable and reproducible (FAIR) and, wherever possible, open access.
* Take opportunities to ensure research activities benefit educational practice.
* Contribute to the [supervision](https://sotonac.sharepoint.com/sites/CareerPathways/SitePages/Glossary.aspx#supervise) of postgraduate students and/or research assistants.

1. **5%**

**Knowledge Exchange and Enterprise Contribution**:

* Building specialist knowledge and experience, with appropriate guidance, support and supervision. Work is typically focused on contributing to the design, development and delivery of knowledge exchange and/or enterprise activities and outputs

1. **5%**

Any other duties as allocated by the line manager following consultation with the post holder.

Internal and external relationships:

Departmental management and University senior management

Other members of the department/University staff

External customers

Relevant suppliers and external contacts

Special requirements:

# Person Specification – Skills and Competencies

All essential and desirable criteria outlined in this Person Specification will be assessed through a combination of recruitment application and CV, and where applicable numerical or written assessment.

**Knowledge, Experience and Qualifications**

Essential

* Substantial and authoritative practical knowledge and experience in manufacturing processes and materials characterisation, supported by detailed understanding.
* The required level of knowledge and understanding will normally have been gained through some or all of the following:
  + Considerable work experience.
  + Vocational training.
  + Formal qualification(s) equivalent to Level 7 or 8 of the [Regulated Qualifications Framework](https://www.gov.uk/what-different-qualification-levels-mean/list-of-qualification-levels) e.g. master’s degree, postgraduate certificate, diploma, PhD in relevant subject area in or Level 7 or 8 award, certificate, diploma.
* Experience with mechanical laboratory and/or manufacturing workshop based environments.
* Experience and knowledge of health and safety requirements relating to manufacturing workshops and especially thermoplastic extrusion and powder additive manufacturing.
* Experience of facilities and resource management.

Desirable

* Teaching qualification (PGCAP or equivalent).
* Membership of Higher Education Academy.
* PhD studies involving additive manufacturing and mechanical characterisation.
* Knowledge of additive manufacturing, mechanical characterisation, full-field experimental mechanics, volumetric imaging (e.g. X-ray computed tomography), engineering design, computer-aided engineering tools (design and simulation), digital data capture and analysis.

**Teamwork and Communication**

Essential

* Delegates and/or collaborates effectively, understanding the strengths and weaknesses of colleagues.
* Works proactively with colleagues and other stakeholders, within and beyond the University, to achieve outcomes.
* Communicates effectively to develop understanding and achieve cooperation.
* Provides clear advice, guidance and recommendations on novel or complex concepts and issues.

**Planning, Organisation and Resource Management**

Essential

* Plans and progresses education, research and/or knowledge exchange and enterprise activities within broad guidelines and established University policies and procedures.
* Formulates development plans to meet current skill requirements.
* Able to organise own activities and prioritise work to meet deadlines.

Desirable

* Project management qualifications

**Problem Solving and Initiative**

Essential

* Develops detailed understanding of long-standing and/or complex problems and applies accumulated knowledge and experience to understand and/or resolve them.
* Demonstrates an awareness of principles and trends within a specialist field and awareness of how this affects education, research and/or knowledge exchange and enterprise activities in the University.

# Job Hazard Assessment

For any hazards identified below a health clearance will be undertaken by our occupational health provider and form part of recruitment checks. Further ongoing clearance may be required for some roles, including for existing members of staff.

**Does the risk assessment identify the need for ongoing health surveillance for this role? Yes**

## Physical Environment

Working outsideNot applicable

Exposure to noise levels >80dbA Occasionally <30% Time

Working with dust or fumes Frequently 30-60% Time

Working with skin irritants/sensitisersFrequently 30-60% Time

Working with chemicals (industrial or cleaning)Frequently 30-60% Time

Working in a confined spaceConstantly >60% Time

Working at heightOccasionally <30% Time

Working with sewage Not applicable

Contact with cytotoxinsNot applicable

Exposure Prone Procedure (EPP) work Not applicable

Direct patient care or patient contact / Contact with clinical  
specimens or pathology work Not applicable

Ionising radiation Occasionally <30% Time

## Psychological and Social Environment

Working shifts Constantly >60% Time

Working nightsNot applicable

Lone working Occasionally <30% Time

Working with children Occasionally <30% Time

Exposure to persons with challenging behaviourOccasionally <30% Time

## Equipment, Tools and Machines

Working with vibrating machinery or toolsNot applicable

Driving duties Not applicable

Driving LGV, PCVs Not applicable

Driving forklift trucks Not applicable

Food handling Not applicable

Contact with latexNot applicable

## Physical Abilities

Prolonged repetitive movements or actions Occasionally <30% Time

Moving or handling heavy loadsOccasionally <30% Time

# Behaviours

Our [Inclusion and Respectful Behaviour Policy](https://www.southampton.ac.uk/about/governance/regulations-policies/policies/inclusion-respectful-behaviour) describes the expectations of everyone who is a part of our community.

Our **Southampton Behaviours** (below) outline the responsibilities we each have in working collaboratively to achieve our University strategy.

**Personal Leadership**

- I take personal responsibility for my own actions and an active approach towards my development.

- I reflect on my own behaviour, actively seek feedback and adapt my behaviour accordingly.

- I demonstrate pride, passion and enthusiasm for our University community.

- I demonstrate respect and build trust with an open and honest approach.

**Working Together**

- I work collaboratively and build productive relationships across our University and beyond.

- I actively listen to others and communicate clearly and appropriately with everyone.

- I take an inclusive approach, value the differences that people bring and encourage others to contribute and flourish.

- I proactively work through challenge and conflict, considering others’ views to achieve positive and productive outcomes.

**Developing Others**

- I help to create an environment that engages and motivates others.

- I take time to support and enable people to be the best they can be.

- I recognise and value others’ achievements, give praise and celebrate their success.

- I deliver balanced feedback to enable others to improve their contribution.

**Delivering Quality**

- I identify opportunities and take action to make improvements.

- I plan and prioritise efficiently and effectively, taking account of people, processes and resources.

- I am accountable for tackling issues, making difficult decisions and seeing them through to their conclusion.

- I encourage creativity and innovation in others, to deliver workable solutions.

**Driving Sustainability**

- I consider the impact on people before taking decisions or actions that may affect them.

- I embrace, enable and embed change effectively.

- I regularly take account of external and internal factors, assessing the need for change, and gaining support to move forward.

- I take time to understand our University strategy and communicate this to others.