TSL review: **Advanced Manufacturing**
Evidence Submission for SOC 3111, 3119, 3544
Submitted by Universities UK International (UUK) and the Universities and Colleges Employers Association (UCEA)

Overview

UCEA surveyed member higher education institutions (HEIs) based on the MAC's stage 2 call for evidence questionnaire. UCEA's survey was structured around the occupations at RQF levels 3- 5 previously identified by HEIs for possible inclusion on the Temporary Shortage List (TSL).

HEIs play a critical role in the UK's advanced manufacturing ecosystem through applied research, materials development, prototyping, testing facilities, and collaboration with industry partners. Universities provide the technical infrastructure and specialist expertise that underpin innovation across advanced materials, engineering, automation and production technologies.

Survey responses from HE employers highlight persistent shortages across several technical and analytical occupations that are essential to delivering advanced manufacturing activity within higher education (HE). This submission draws on employer evidence relating to:

- **SOC 3111 – Laboratory Technicians**
- **SOC 3119 – Science, Engineering and Production Technicians**
- **SOC 3544 – Data Analysts**

Responding HEIs often described these roles in the context of applied research, prototyping, specialist laboratories and facilities that directly support advanced manufacturing activity.

Responding HEIs consistently identified these roles as critical to maintaining research capacity, operating specialist facilities, and supporting industry-linked projects. In many cases, respondents selected these occupations but did not provide additional free-text detail, indicating broad and shared recognition of their importance across the sector.

SOC 3111

Overview

Within advanced manufacturing contexts, laboratory technicians underpin applied research, materials testing, prototyping and specialist facilities. Without them laboratory-based teaching and research cannot run safely or at scale.

Survey responses indicate **strong and consistent support** for retaining SOC 3111 on the TSL, with multiple HEIs identifying this role as critical to advanced manufacturing activity within HE.

Drivers of shortage

Responding HEIs highlighted:

- Strong salary competition from private-sector manufacturing and engineering firms
- High levels of technical specialism and experience requirements
- Limited domestic supply of suitably skilled candidates
- Roles tied to specialist facilities, limiting recruitment flexibility

Recruitment trends and outlook

HEIs report long-standing recruitment challenges, with shortages expected to persist as demand increases in areas such as materials science, automation and applied engineering research.

Impact of removal from TSL

Removal from the TSL would delay research activity, reduce laboratory capacity and weaken collaboration with industry partners reliant on university-based advanced manufacturing expertise.

SOC 3119

Overview

SOC 3119 technicians support engineering, production and applied research functions aligned with advanced manufacturing. Responding HEIs consistently selected this occupation as a priority for retention on the TSL.

Drivers of shortage

Responding HEIs cited:

- Competition with industry employers offering higher salaries
- Demand for hybrid skillsets combining engineering, production and digital capabilities
- Insufficient domestic training pipelines

Recruitment trends and outlook

HEIs describe shortages as structural and likely to persist as demand increases in automation, digital manufacturing and advanced production methods.

Impact of removal from TSL

Removal would reduce the HE sector's capacity to support applied research and innovation, increase workload pressures and slow project delivery.

SOC 3544

Overview

Within advanced manufacturing, data analysts support modelling, simulation, automation and digital manufacturing systems.

Drivers of shortage

Responding HEIs highlighted:

- Intense cross-sector competition for data and analytical skills
- Rapidly evolving technical requirements
- HE salary constraints relative to private-sector employers

Recruitment trends and outlook

Demand is expected to grow as advanced manufacturing becomes increasingly data-driven.

Impact of removal from TSL

Removal would exacerbate skills gaps and limit the ability of the HE sector to support manufacturing innovation and industrial collaboration.

Conclusion

HE employers evidence demonstrates that SOC 3111, SOC 3119 and SOC 3544 are integral to the delivery of advanced manufacturing research, innovation and skills development within HE. Survey responses indicate that shortages in these roles are persistent, structurally driven, and exacerbated by strong private-sector competition and limited domestic supply.

Despite ongoing efforts to recruit, train and upskill domestic staff, respondents report that shortages continue to constrain research delivery and collaboration with industry partners. Removal of these occupations from the TSL would further reduce institutional capacity to support advanced manufacturing activity and weaken HE's contribution to the UK's industrial and innovation priorities.

Retention of these occupations on the TSL is therefore important to sustaining advanced manufacturing capability within the higher education sector. As an HEI

states, “Our Laboratory and Engineering Technicians run everything from our high-fidelity health simulation suites to our advanced manufacturing workshops for our student courses and our Research Laboratory. Without them, we simply cannot deliver our curriculum or maintain a safe research environment”.