

SE4023 Sustainability

Module status in MSc Professional Engineering: Option **Module credits:** 15

Aims

To provide an understanding of the challenges presented to engineering enterprise by the quest for more sustainable development, together with practical experience in the design and/or realisation of processes responding to that challenge.

Content

This is a generic module specification – whilst adhering to the broad principles set out here, the content of any particular delivery of the module will necessarily depend on the selected engineering domain and the learning contract agreed between the programme participant, Aston University and the participant’s professional engineering institution.

Illustrative content: Environmental issues. Consequences of neglect. Ethical and commercial concerns. Measuring sustainability. Legislation, regulations and guidelines; compliance. Sustainable design – practical applications.

Teaching

The module will be taught wholly or partly through work-based projects supplemented by appropriate individual learning (eg through directed reading) and supported by individual supervision and mentoring. Where specified by the learning contract, formally taught elements from level 4 modules forming part of another EAS MSc programme may be accessed by distance learning (eg PD4003 Sustainable Futures).

Assessment

Written reports and (where appropriate) other formal work products arising from the work-based project(s) will be assessed.

Where content has been accessed by distance learning, and if specified by the learning contract, a proportion of the module mark may be derived from formal assessments associated with the modules accessed.

If assessment is based entirely on work-based activities, the participant’s reports should total around 4000 words, or 10-15 pages including appropriate diagrams, tables, etc. Where formal assessment of distance learning provides part of the overall module assessment, reports on work-based activities should be limited to around 2500 words (about 6-9 pages) in total.

Module outcomes

What the participant should gain from successful completion of the module

Teaching/Learning Methods

Assessment Methods

Knowledge and Understanding

Understanding of environmental issues and their relevance to current and emerging technologies and design methodologies
Appreciation of the implications of sustainable development for engineering practice
Knowledge of relevant legislation, regulations and guidelines

Work-based projects, supplemented by individual learning and distance learning as appropriate

Written reports and other appropriate formal work products, possibly supplemented by exam assessment of distance learning material

Intellectual Skills

Apply technologies and design processes innovatively to address sustainability

Professional/Subject-Specific Skills

Give due weight to environmental constraints alongside commercial and other considerations
Provide technical leadership by disseminating understanding of environmental issues

Transferable Skills

Learning resources

As appropriate to the selected engineering domain and any modules accessed by distance learning

Other modules required in order to take this module

SE4001 Professional Development Audit