

SE4012 Emerging Technologies

Module status in MSc Professional Engineering: Core Module credits: 15

Aims

The participant should acquire a good knowledge of new technologies that are just coming into leading professional practice or are likely to do so over the foreseeable future, supported by an appreciation of the scientific developments underpinning those new technologies and their probable application areas.

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: Recent scientific developments and their implications for the enhancement of practical engineering technologies and their applications. Anticipated benefits of and constraints associated with emerging technologies.

Teaching

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

Assessment

Written reports and/or 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

Knowledge of developing technologies and an awareness of their potential applications, benefits and limitations

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

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

Intellectual Skills

Ability to develop preliminary or experimental applications of new technologies or associated science, eg in a mathematical or computer-based context

Professional/Subject-Specific Skills

Provide technical leadership in employment by disseminating knowledge of new developments

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