

## Advanced Metals Processing

School of Metallurgy & Materials, School of Metallurgy and Materials

College of Engineering and Physical Sciences

### Details

**Code** 17189

**Level of study** Third/Final year

**Credit value** 10

**Semester** Full Term

### Module description

The module will present advanced methods used for the processing of metals, concentrating on three key areas namely steelmaking, shape casting and powder metallurgy. The module will discuss secondary steel making processes, in particular covering deoxidation, control of alloy composition, inclusion removal and impurity level reduction. The basic processes in shape casting will be outlined, followed by a description of commonly-encountered defects and their effect on mechanical properties, and solutions that may be implemented to avoid their occurrence. Finally, metal powder production processes will be outlined, and the effect of powder characteristics and processing conditions on the production of parts by powder metallurgy explained. Case studies of applications will highlight the importance of understanding processing conditions on the final product quality.