Course offer

HÖGSKOLAN VÄST

Advanced manufacturing processes 2.5 hp

Recent developments in manufacturing techniques are providing extraordinary benefits such as unique joint properties, synergistic mix of materials, component cost reduction, increased productivity and improved quality, the ability to manufacture complex geometrical configurations, and reliable assessment of the suitability of novel materials for the manufacture of new sustainable industrial products. The course aims to assist industrial personnel update their knowledge and widen their understanding of various aspects of new/advanced industrial manufacturing processes. The course delivers a general overview of the utilization of advanced manufacturing methods for production and quality management. On successful completion of the course, students will have acquired increased knowledge about the selection of processes for different industrial application conditions, operational process characteristics of advanced manufacturing, and the fundamentals underlying process and parameter choices of advanced manufacturing techniques.

Content

The course comprises the following themes:

- Advanced fusion joining techniques
- Micro- and nano-joining
- Therrmal spray technologies
- Directed energy deposition-arc (DED-arc)
- Hybrid joining processes
- Recent developments in manufacturing showcasing the benefits of advanced manufacturing techniques
- Theoretical background, process parameters, novel aspects, process capabilities, and process variants and their application

Industry and university

This course has been developed in collaboration with industrial partners in one of our industrial education projects. The project includes master's level courses for a mixed group of students and professionals with the aim of increasing the competitiveness of Swedish industry.

Implementation and pedagogic concept

The course is based on University West's concept of *work integrated learning*, which aims to integrate theory and practice in education. Theoretical lectures are combined with case studies and practical examples.

Web-based with occasional physical meetings

The course is mainly delivered via distance learning in flexible, net-based form with one or two physical meetings. On-line lectures are combined with supervision and reporting meetings using web-based meeting systems. Some course meetings are compulsory.

Course material

- Lectures materials, video demos, lecture notes and handouts
- Case materials from the manfacturing industry.

Target audience

Professionals within the manufacturing industry.

Prerequisites

Three years of higher education (Bachelor level) in engineering & technology (Bachelor degree corresponding to 180CP). Basic understanding and knowledge of joining and manufacturing processes. Alternatively, relevant professional work experience. Please attach a short resume if your application is based on work experience. A template (in Swedish) is available at our website www.hv.se/produktionskurser.

Examination

Assessment will take place in the form of continuous assessment throughout the course in the form of project works.

Registration

Course registration via University West's website www.hv.se/produktionskurser

More information

For more information, please contact produktionskurser@hv.se