**Frequency**
Every year

**Summary**
This is an interactive course explaining the main physical and chemical concepts to understand epitaxy of crystalline thin films and what determines the morphology, composition and structure of a material grown per epitaxy both in the bulk and as nanostructure.

**Content**
This is an interactive course explaining:
1. The main physical and chemical concepts to understand epitaxy of crystalline thin films.
2. What determines the morphology, composition and structure of a material grown per epitaxy.

In the main body of the course contains the main scientific concepts that explain high quality epitaxy. We will also describe the main techniques used by industry and scientific laboratories for the epitaxial growth of materials and devices. Finally, the translation of the epitaxy of macroscopic crystals will be translated to the growth of nanostructures and novel materials.

**Keywords**
molecular beam epitaxy, thermodynamic diagrams, surface reconstruction

**Learning Prerequisites**
Required courses
thermodynamics

**Assessment methods**
oral/written