RESERVOIR GEOLOGY AND GEOPHYSICS
Complete list of competences

Basic competences
- Knowledge forming the basis of original thinking in the development and/or application of ideas, typically in a research context.

- Capacity to apply the acquired knowledge to problem-solving in new or relatively unknown environments within broader (or multidisciplinary) contexts related to the specific field of study.

- Capacity to integrate knowledge and tackle the complexity of formulating judgements based on incomplete or limited information, taking due consideration of the social and ethical responsibilities involved in applying knowledge and making judgements.

- Capacity to communicate conclusions, judgements and the grounds on which they have been reached to specialist and non-specialist audiences in a clear and unambiguous manner.

- Skills to enable lifelong self-directed and independent learning.

General competences
- The independence and confidence to take part in collaborative research and other joint scientific or technology-based projects.

- Ability to transfer knowledge scientific and technical knowledge to others in interdisciplinary contexts.

- Ability to tackle general data collection and analysis problems and more complex problems involving the critical integration of diverse data from different sources.

- Ability to adapt spoken and written communication to specific situations and objectives.

- The knowledge to predict and, where necessary, control the evolution of complex situations using new methodologies adapted to specific scientific/research settings.

- Ability to critically assess current research.

- Ability to devise, design, implement and follow a comprehensive research procedure founded on academic rigour. Students should be able to critically assess a scientific or technical problem and devise a solution or approach through original research that expands on existing knowledge in the literature.

Specific competences
- Capacity to apply methods and techniques for characterizing the lithological, geometric and evolutionary features of a sedimentary reservoir at the microscopic and regional scales.

- Ability to classify and analyse the materials and structures present in sedimentary rocks and to understand the effects of physical and chemical variables on their general evolution.

- Ability to model surface structural systems and sedimentary basins and the geological materials from which they are formed, as well as the principal surface and deep processes that determine their behaviour.

- Ability to predict and quantify the surface processes that govern the temporal and spatial aspects of sedimentary reservoir formation and evolution.

- Capacity to assess the properties, prospective behaviour and quality of geological reservoirs, integrating information obtained from multidisciplinary data into a single conceptual model.

- Ability to interpret and, when required, design data acquisition and processing techniques for geophysical information, taking into account the fundamental mathematical, physical and geological principles applicable to geophysics.

- Capacity to identify, apply and interpret the results of the most suitable geophysical and geological techniques for different geological settings.

- Ability to prepare, process and present geological and geophysical data using the appropriate qualitative and quantitative techniques and specialized software, as well as the skills to solve numerical problems requiring the application of analytical and computational techniques.

- Capacity to identify underground reservoirs with the capacity to store different types of fluids (gas, CO_2, water, etc.) and assess their behaviour.

- Ability to lead a team responsible for identifying and/or characterizing a geological reservoir or examining the geological and evolutionary characteristics of a sedimentary basin.