

- Faculté des sciences
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### Deep energy resources (3GH2177)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
<b>Master en hydrogéologie et géothermie</b>	<b>Cours: 30 pg</b>	<b>contrôle continu: 1</b>	<b>3</b>

ph=période hebdomadaire, pg=période globale, j=jour, dj=demi-jour, h=heure, min=minute

#### Période d'enseignement:

- Semestre Printemps

#### Equipe enseignante:

S. Miller, B. Valley

#### Objectifs:

The objective of this course is to explore the mechanisms responsible for the global distribution of deep energy resources, and how best to exploit them with minimal environmental impact. This includes deep geothermal, hydrocarbon resources, and carbon sequestration. The course incorporates a broad range of topics, including geodynamics, geomechanics, induced seismicity, exploration strategies, and the different types of reservoirs and their management.

#### Contenu:

Deep Geothermal Energy: High enthalpy systems, possibilities and limitations  
 Hydrocarbons: Deposition processes, global distribution, and geopolitical consequences  
 Carbon Cycle: Anthropogenic and non-anthropogenic sources of CO<sub>2</sub>;  
 Effects of atmospheric CO<sub>2</sub> on climate  
 Case studies of CO<sub>2</sub> capture and storage  
 CO<sub>2</sub> markets and politics

#### Forme de l'évaluation:

Literature review and oral presentation.

#### Documentation:

Lecture notes will be provided in the form of PowerPoint presentations, and supplemented with relevant readings from international journals.

#### Pré-requis:

Introduction to Geothermics, Rock and Earthquake mechanics

#### Forme de l'enseignement:

Lectures and practical