## Quantitative tectonics / Tectonique quantitative

Enseignant(s) : Schmalholz S.

<table>
<thead>
<tr>
<th>Cet enseignement est proposé dans les orientations suivantes :</th>
<th>Type d'évaluation</th>
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<tbody>
<tr>
<td>Géochimie, Tectonique alpine, Gîtes métallifères / Geochemistry-Alpine Tectonics-Ore Deposits</td>
<td>Pratique</td>
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<thead>
<tr>
<th>1. Objectifs et contenu de l'enseignement</th>
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<tbody>
<tr>
<td><strong>Objectives:</strong></td>
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<tr>
<td>- Understanding the fundamental concept of continuum mechanics, that is, concept of conservation of mass, concept of force balance and concept of conservation of energy.</td>
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<td>- Ability to apply mechanical concepts to quantify tectonic processes.</td>
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<td>- Ability to perform basic quantifications of tectonic processes on a piece of paper and with the help of scientific programming (using Matlab).</td>
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<th>Content:</th>
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<tbody>
<tr>
<td>- Introduction to continuum mechanics</td>
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<tr>
<td>- Dimensional analysis and dimensionless solutions</td>
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<tr>
<td>- Overthrusting</td>
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<tr>
<td>- Folding</td>
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<tr>
<td>- Boudinage and necking</td>
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<tr>
<td>- Ductile shear zones</td>
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<tr>
<td>- Flexure</td>
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<td>- Introduction to fracture mechanics</td>
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<th>Recommended books:</th>
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<tbody>
<tr>
<td>- Turcotte and Schubert: Geodynamics</td>
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<tr>
<td>- Pollard and Fletcher: Fundamentals of Structural Geology</td>
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| 2. Pré-requis :                          |

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<thead>
<tr>
<th>3. Dates 2017/2018:</th>
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<tbody>
<tr>
<td>Les mercredis du semestre d’automne 2017, de 9h15 à 12h.</td>
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