

Cours	Enseignant-e-s	★ S1	🌱 S2	★ S3	🌱 S4	Examen	Crédits	
<b>Master of Science in Hydrogeology and Geothermics</b>								<b>TOTAL 120</b>
<b>Introductory courses</b>								<b>TOTAL 8</b>
Introduction to hydrogeology and hydrology	P. BRUNNER	30pg				écrit	3	
Introduction to geothermics	S. MILLER	20pg				oral	2	
Mathématiques et statistique	J. Straubhaar	30pg				écrit	3	
<b>Processes in hydrogeology and geothermics</b>								<b>TOTAL 12</b>
Hydrodynamique souterraine	P. PERROCHET	40pg						
Processus de transport	P. PERROCHET	20pg				controle continu	6	
Hydrochemical and microbial processes	D. HUNKELER	40pg				écrit	4	
Rock and earthquake mechanics	S. MILLER	20pg				oral	2	
<b>Water-earth systems</b>								<b>TOTAL 10</b>
Alluvial aquifer systems: from quaternary geology to surface water-groundwater interactions	P. BRUNNER D. HUNKELER R. LE BAYON G. Preisig	40pg				controle continu	4	
Systèmes aquifères fissurés et karstiques	P. Jeannin B. VALLEY	40pg				controle continu	4	
Field camp I	G. Preisig	4j				controle continu	2	
<b>Site/resource characterisation</b>								<b>TOTAL 14</b>
Forages, tests hydrauliques, traceurs naturels et artificiels	P. RENARD B. VALLEY	60pg				controle continu	6	
Geophysics	S. MILLER	30pg				controle continu	3	
Remote sensing	P. BRUNNER	20pg				controle continu	2	
Field camp II	P. BRUNNER P. PERROCHET G. Preisig	6j				controle continu	3	
<b>Modelling I</b>								<b>TOTAL 7</b>
Modélisation des réservoirs	P. RENARD	20pg				controle continu	2	
Modélisation des écoulements et des processus de transport	G. Preisig	50pg				controle continu	5	
<b>Engineering and resource exploitation</b>								<b>TOTAL 9</b>
Systèmes géothermiques peu profonds	V. BADOUX	20pg				controle continu	2	
Advanced Geothermics and earth energy resources	S. MILLER	30pg				controle continu	3	
Water supply and water treatment	P. BRUNNER	20pg				controle continu	2	
Ingénierie géotechnique	G. Preisig	20pg				controle continu	2	
<b>Modelling II</b>								<b>TOTAL 7</b>
Numerical modelling of geomechanical processes	S. MILLER		30pg			controle continu	3	
Géostatistique et modélisation inverse	P. BRUNNER P. RENARD		40pg			controle continu	4	
<b>Resource management</b>								<b>TOTAL 14</b>
Water resource management in the European context	P. BRUNNER D. HUNKELER		20pg					
Water resource management in semi-arid/arid regions and in humanitarian contexts	P. BRUNNER E. MILNES		20pg			controle continu	4	
Groundwater pollution and remediation	D. HUNKELER		40pg					
Urban hydrogeology	M. SCHIRMER		20pg			controle continu	6	
Hydraulic tests in fractured aquifers	B. VALLEY		20pg			controle continu	2	
Geothermal field trip	S. MILLER		4j			controle continu	2	
<b>Master thesis preparation and Master thesis research</b>								<b>TOTAL 39</b>
Literature review, scientific writing and master project proposal	P. BRUNNER D. HUNKELER S. MILLER P. RENARD B. VALLEY S. WIRTH		90pg			controle continu	9	
Master thesis research	P. BRUNNER D. HUNKELER S. MILLER B. VALLEY		300pg	300pg		mémoire / dissertation	30	