

Module Nr.	Credits	Workload	Semester	Frequency	Duration
SE-CO-17	7 CP	210 h	2 and 3	Yearly in SS and WS	2 semesters
Courses			Contact time	Self-study	Group size
a) Deep geothermal energy (summer term)			3 h/week	85 h	According to demand, practical exercise in c) are limited to ~15 students due to license availability
b) Well logging rudiments (winter term)			2 h/week	55 h	
c) Well logging II, analysis, interpretation (summer term)			2 h/week	55 h	
Selected Topics in Reservoir Characterization					
Learning outcomes					
After successful completion of the module students					
<ul style="list-style-type: none"> • appreciate the differences of hydrothermal and petrothermal energy provision • learned to make basic calculations regarding the feasibility of geothermal energy provision (in general and site specific) • understand the approach to geophysical surveys in boreholes • are familiar with the basic data processing methods and correlation approaches applied to outcomes of different logging methods • can operate the “industry standard”, wellcad 					
Content					
a) Deep geothermal energy:					
<ul style="list-style-type: none"> • Introduction to reservoirs (hydrocarbon, geothermal) • Physical properties of reservoir fluids • Hydraulic transport (Kozeny-Carman relation) and storage (linear poroelasticity I: isostatic stress states) • Theory and practice of pumping tests (diffusion equation, scaling) • Geothermics (add advection to diffusion) • Aspects of waves in real media (wave equation, linear poroelasticity II: add deviatoric stresses) 					
b) Well logging rudiments					
<ul style="list-style-type: none"> • Borehole completion • Logging tools • Basics of measurements 					
c) Well logging II, analysis, interpretation					
<ul style="list-style-type: none"> • Introduction to wellcad • Case studies 					
Teaching methods / Language					
a) Lecture (2h) / Exercise (1h) / English					
b) Lecture (1h) / Exercise (1h) / English					
c) Lecture (1h) / Exercise (1h) / English					

Mode of assessment
Written exams (3h) + handed in assignments
Requirements for the award of credit points
Passed final exam
Module applicability (in other study programs)
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Weight of the mark for the final score
5.83 %
Module coordinator and lecturer(s): Jörg Renner (coordinator)
Further information:
Prerequisites: Basic knowledge in mathematics and physics, basic command of sheet-calculation software