

# MGEO104 Tectonics, module part: Balanced Cross Sections

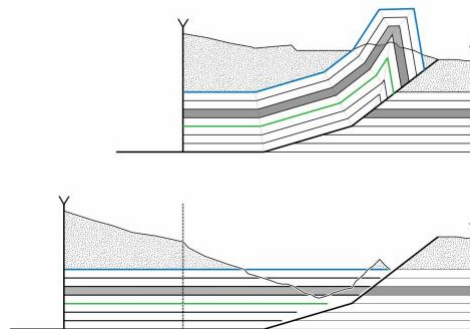
Compact course, 19 – 23 February 2024

LV-Nr. 50040, 3 ECTS points

## Instructors:

Kamil Ustaszewski & Philipp Balling

This course conveys theoretical concepts and practical hints for the geometric restoration of geological cross sections. It consists of lectures and “hands-on” exercises using synthetic examples and real case studies, as well as computer-aided 2D and 3D structural modelling techniques.



## Schedule:

The course will be held from Monday till Friday in 15 units à 90 minutes.

Time	Mon	Tue	Wed	Thu	Fri
09:15-10:45	1	4	7	10	13
11:00-12:30	2	5	8	11	14
14:15-15:45	3	6	9	12	15

## Syllabus:

units 1-3: review of basic kinematic deformation modes, definitions & concepts of line and area balancing, geometries and kinematics of fault-related folding, Interpolation and extrapolation methods for cross section constructions.

units 4-6: „rules of thumb“ in section balancing, line-length balanced flexural-slip restoration techniques in contractional settings.

units 7-9: area-balancing techniques in contractional settings, fault-bend vs. fault-propagation folding, trishear fault-propagation folding.

units 10-12: duplexes, restoration techniques in thick-skinned tectonics, oblique simple-shear restoration and fault-prediction techniques in extensional settings.

units 13-15: computer-aided forward- & backward-modelling of fault-related structures, 2D and 3D geometrical modelling with commercially available software.

## Required material:

A4 transparent paper, A4 millimeter scale paper, set square with integrated protractor, ruler, drafting compass, curvimeter, pocket calculator, pencils & colour pencils, equal-area hemisphere projection („Schmidt-net“).

Further course material will be provided in printed form.

## Course language & registration

German or, upon request, English. Please register in [Friedolin](mailto:Friedolin) or contact [kamil.u@uni-jena.de](mailto:kamil.u@uni-jena.de) if you're not based in Jena.

