## S164  Analysis of environmental processes

**Coordinator:** Prof. Dr. I. Unkel  
**Teaching Staff:** Prof. Dr. I. Unkel  
**Section for SSE:** E - Open Studies  
**Section for EM:** B7 - Human Development in Landscapes  
**Status for SSE:** Elective  
**Status for EM:** Elective

<table>
<thead>
<tr>
<th>Contact time overall:</th>
<th>52 hours</th>
<th>Prerequisites:</th>
<th>None</th>
<th>Term (Semester):</th>
<th>2</th>
<th>Summer</th>
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<tbody>
<tr>
<td>Independent study:</td>
<td>128 hours</td>
<td>Language of tuition:</td>
<td>English</td>
<td>Class size:</td>
<td>15</td>
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<tr>
<td>Overall workload:</td>
<td>180 hours</td>
<td>Prerequisites:</td>
<td>None</td>
<td>Language of tuition:</td>
<td>English</td>
<td>Class size:</td>
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</tbody>
</table>

### Teaching Units:

**Exercise**  
- Analysing and publishing environmental proxy data  
  **Teaching Staff:** Prof. Dr. I. Unkel  
  **Contact time:** 39

**Excursion**  
- Regional environmental processes  
  **Teaching Staff:** Prof. Dr. I. Unkel  
  **Contact time:** 13

### Competences the module has been designed to develop:

- **Mastery of subject matter:** not at all  
- **Mastery of methods:** strong  
- **Application of knowledge and understanding:** strong  
- **Problem solving competences:** strong  
- **Communication competences:** medium  
- **Learning competences:** medium
## Analysis of environmental processes

### Content:
- Field course, taking sediment samples at selected locations (e.g. Schleswig-Holstein or Switzerland)
- Producing/describing/drawing sedimentary profiles
- Laboratory analyses (e.g. grain size, LOI)
- Setting up scientific articles
- Article writing and data implementation
- Reading and presenting respective reference literature

### Learning outcomes:
The module focuses on sedimentary archives of environmental processes. Sample material which is described and taken by the students in the field is analyzed in the laboratory. The results of the field and laboratory analyses are assembled in a scientific text simulating a peer-reviewed scientific publication. This course fosters the ability of the students to analyze environmental data from the sedimentary record on their own. In the end they should present and discuss this data in a boarder scientific context going beyond a standard lab report. This should enable/prepare them to write scientific monographs (theses) or peer-reviewed journal articles.

**Key skills:**
1. Designing experiments/field work
2. Managing data
3. Publishing data (transforming data into graphs and texts)

### References:
Example: Journal of Environmental Management
http://www.sciencedirect.com/science/journal/03014797

The course materials are made available through the e-learning platform OLAT.

### Recommended previous knowledge:
- Module: Climate and Landscape Changes – Past and Future
- Module: Fundamentals of Statistics for Ecologists

### Teaching media:
Field and laboratory equipment for sedimentary analyses
Selected software tools (Inkscape, R, Citavi, Endnote, Mendeley)

### Assessment:
- Seminar paper 100%

### Contact details of module coordinator:
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