S175 Long Term Evolution of the North-Sea Coast

Modulecode: MNF-ftz-geo-S175 **POS Module-Code:** 039/17700 **POS Exam-Number:** 039/17710

Coordinator: Prof. Dr. Roberto Mayerle

Teaching Staff: Dr. Gerd Bruss, Dr. habil. Dirk Meier

Section for SSE: E - Open Studies **Status SSE:** Elective **Level of course:**

Section for EM: E - Open Studies **Status EM:** Elective

Contact time overall:	65 hours	**Credit points:**	6 ECTS	**Term (Semester):**	1, 3 Winter
Independent study:	115 hours	**Prerequisites:**	none	**Language of tuition:**	English
Overall workload:	180 hours			**Class size:**	20

Recommended previous knowledge:
Geology of the North-Sea, History of coastal protection

Teaching Units:

Seminar - Landscape Development, Ecology and History of Human Reactions at the North-Sea Coast
Teaching Staff: Dr. habil. Dirk Meier
Contact time: 52

Exercise - Excursion to the North-Sea Coast of Schleswig-Holstein with Borings in the Coastal Landsacpe
Teaching Staff: Dr. habil. Dirk Meier, Dr. Gerd Bruss
Contact time: 13 (one day)

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Teaching Staff:
Contact time:

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Contact time:

Competences the module has been designed to develop:

Mastery of subject matter:	strong	**Problem solving competences:**	medium
Mastery of methods:	strong	**Communication competences:**	minor
Application of knowledge and understanding:	medium	**Learning competences:**	medium

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Content:

The course deals with the long term evolution of the German North Sea coast on the basis of sound geological, geographic, paleo-environmental, archeological and historical research. Emphasis is given to the sea level development and the interpretation of the several sea-level rise reconstructions during the last Ice Age. For that the history of coastal evolution including the geomorphological and landscape development of the southern North-Sea region (Schleswig-Holstein, Lower Saxony, Netherlands, Belgium) will be dealt with in detail. Furthermore the importance of the interactions between human society and coastal landscape, history of coastal protection will be introduced. Emphasis will also be given to the effects of the heavy storm-surges of 1362, 1934, 1717, 1825, and the most recent storm surges of 1953 and 1962. The course will also provide insight into the future development of the coast.

Learning outcomes:

The elective gives a overview about the environmental history of the North Sea. Students will be introduced to a wide range of coastal processes and human reactions on a multidisciplinary basis. Knowledge of Holocene sedimentary successions and coastal evolution is of vital importance to geologists, archaeologists and historians involved in studies dealing with coastal plains and having to interpret their coastal Holocene sediments. Students will gain knowledge into the sea-level rise, coastal landscape development around the southern North-Sea area and the influence of coastal protection as well as questions about the future. Analyses of the historic coastal landscapes lead to the insight that greater attention must be paid to the geomorphological changes of the coastal areas and in some parts of the Wadden-Sea (North-Frisia f.e.).
In winter we offer a one day excursion to the North-Sea coast of Schleswig-Holstein.
In the seminar students will learn to work in an interdisciplinary way in the field of coastal research (geology, geography, geo-archaeology, history, ecology) via **regional case studies** on the basis of the scientific literature, excavation plans, written sources or drilling profiles of the coastal area of the North-Sea coast. Their reports will be discussed in the seminar.

References:

Dirk Meier, Hans Joachim Kühn, Guus J. Borger 2013: Der Küstenatlas. Das schleswig-holsteinische Wattenmeer zwischen Vergangenheit und Gegenwart (Heide 2013) Boyens.

Erik Thoen, Guus J. Borger, Adrian M.J. de Kraker, Tim Soens, Dries Tys, Lies Verwaet, Henk J. T. Weerts (Ed.) 2013: Landscapes or seascapes? The history of the coastal environment in the North-Sea area reconsidered (Turnhout, Belgium). Brepols

Teaching media:

Power Point Presentation

Assessment:

Seminar Paper 100% (Report and presentation in class)

Examination office:

Examination Office Geography and Geosciences
Ludewig-Meyn-Straße 12 (Room 019 - behind the lecture hall)
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