

<b>Modulnummer</b>	<b>74500 (QIS-registration for examination)</b>
<b>Modulname</b>	2.1.6 Hydrobiologische Exkursion, Polen
<b>Modulname - englisch</b>	2.1.6 Fieldtrip Hydrobiology Poland
<b>Studiengang und -abschnitt</b>	
<b>Häufigkeit des Angebots</b>	Jährlich im SS
<b>Modulverantwortlicher</b>	Prof. Dr. Fohrer
<b>Studienberatung zum Modul</b>	Dr. W. Windhorst
<b>Lehrveranstaltungen und Dozenten</b>	Seminar Hydrobiology, Prof. Dr. Fohrer durch Dozenten Excursion Hydrology, Prof. Dr. Fohrer durch Dozenten
<b>Vorkenntnisse</b>	Basics in Ecology and Hydrology
<b>Sprache</b>	English
<b>Plätze</b>	12, registration up to 1 May <a href="mailto:wwindhorst@ecology.uni-kiel.de">wwindhorst@ecology.uni-kiel.de</a>
<b>Lehrformen (Präsenzstunden/ Workload)</b>	Seminar 30h / 90h Excursion 30h / 90h
<b>Ablauf Art und Gewichtung der Prüfungsleistungen</b>	Project 100%
<b>European Credit Points des Moduls</b>	6
<b>Ziele des Moduls</b>	Students are to learn how to diagnose the inland waters independently (for example a lake or a river) taking into account their biological and physico-chemical parameters. What is more, students will also be able to use the acquired theoretical knowledge in practice (i.e. in nature resources management like restoration, water protection, biomanipulation) and they will learn how to present the results obtained during the field research orally and in writing.
<b>Inhalte des Moduls</b>	Any alterations in the way the catchment basin is used, for instance caused by urbanization, the development of industry or agricultural intensification, lead to the deterioration of the quality of surface waters. Monitoring of water quality is, then, the basic method of controlling the water environment. In the diagnosis of the condition of water ecosystem the indices based on physico-chemical and biological parameters (f. e. phytoplankton, periphyton, hydromacrophytes, benthic macroinvertebrates) will be used. In case of eutrophic lakes with permanent domination of cyanobacteria achieving and maintaining the satisfactory quality of waters is often associated with restoration. The evaluation of the water ecosystem affected by restoration will be made by students on the example of Lake Durowskie in the middle of the vegetation period. The following problem tasks for students were chosen: <ol style="list-style-type: none"> <li>1. The evaluation of the ecological condition of the lake in connection with macrophyte-based indices.</li> <li>2. Taxonomic composition, the number of and biomass of the phytoplankton.</li> <li>3. Diatom index of periphyton.</li> <li>4. The composition and biomass of benthic macroinvertebrates.</li> <li>5. Spatial variability of physico-chemical indices according to the depth and horizontal changes (temperature, oxygen, the pH level, and electrolytic conductivity).</li> </ol>
<b>Vermittelte Kompetenzen</b>	Students are competent to obtained results of field and laboratory

investigations and to evaluate the ecological condition of Lake Durowskie, according to the requirements of the Water Framework Directive. By comparing them with the data obtained in 2008 and 2009 students will be able to evaluate the reaction of the ecosystem to restoration and to devise optimized management plans.

### **Studienhilfsmittel**

1. Ciecierska H. 2008. Macrophyte-based indices of the ecological state of lakes. Dissertations and Monographs 139, Wyd. UWM.
2. Schaumburg, J., Schmedtje, U., Schranz, Ch., Köpf, B., Schneider, S., Stelzer, D., Hofmann, G., 2005. Instruction Protokoll for the ecological Assessment of Lakes for Implementation of the EU Water Framework Directive: Macrophytes and Phytobenthos. Bavarian Water Management Agency. München. 1–44.
3. Schiefele, S., Schreiner, C., 1991. The use of diatoms for monitoring nutrient enrichment, acidification and impact of salt in rivers in Germany and Austria. W: Whitton, B.A., Rott, E., Friedrich, G. (red.): Use of Algae for Monitoring Rivers. Institut für Botanik. Universität Innsbruck. s. 103–110.
4. Schoenfelder, I., Gelbrecht, J., Schoenfelder, J, Steinberg, C.E.W., 2002. Relationships between littoral diatoms and their chemical environment in northeastern German lakes and rivers. J. Phycol. 38: 66–82.
5. Wetzel R. G. 2001. Limnology. Lake and River Ecosystems. Third Edition. Oxford Academic Press, 767pp.