

**Table 5.2** Course specification

Type and level of studies: Bachelor			
<b>Course name:</b> Environmental monitoring			
Course status: obligatory for Bachelor of Science in Environmental Protection /elective for Bachelor of Science in Chemistry – Quality Control and Environmental Management			
Number of ECTS credits: 6			
Requirement: -			
<b>Course aim</b> Students learn to design environmental monitoring. This course provides the basis for a more detailed knowledge of the application of various techniques in monitoring the environment, methods and procedures for obtaining information on environmental quality, data analysis in order to manage the environment.			
<b>Course outcome</b> Obtain the necessary knowledge in taking environmental samples, selecting the method of analysis, data management, data analysis, producing reports, using the information for the purpose of environmental management.			
<b>Course content</b>			
<i>Theory</i> Theoretical basics of water, air, soil, sediment monitoring. Determining required information that can be obtained by monitoring (defining a representative sample of the population for environmental quality; selecting a statistical method that can be applied to generate the information requested, including requests for that information; learning ways to identify what information can be obtained; comparing information which is required with that which can be monitored). Designing a monitoring network (marking the location for sampling, determining what needs to be measured and calculating the frequency of sampling). Documentation of procedures for collecting data and for performing and publishing information.			
<i>Practice: Practical classes, OFT, SRW</i> Sampling surface water, groundwater and wastewater. Quality control of environmental monitoring (equipment preparation for sampling, transport and storage of samples). Environmental monitoring- practical examples. Information systems in water monitoring.			
<b>Literature</b>			
<ol style="list-style-type: none"> <li>1. M. Kaštelan-Macan i M. Petrović (Ed.): Analitika okoliša, HINUS &amp; Fakultet hemijskog inženjerstva o tehnologije, Zagreb, 2013.</li> <li>2. N. Pernar, D. Bakšić, I. Perković: Terenska i laboratorijska istraživanja tla, priručnik za uzorkovanje i analizu, Šumarski fakultet sveučilišta u Zagrebu, 2013.</li> <li>3. A. Mihajlov: Osnove analitičkih instrumenata u oblasti životne sredine, EDUCONS Univerzitet, 2010.</li> </ol>			
Additional literature:			
<ol style="list-style-type: none"> <li>1. B. Dalmacija, M. Bečelić-Tomin, S. Maletić (Ed.): Monitoring otpadnih voda i njihovog uticaja na životnu sredinu, Prirodno-matematički fakultet, Departman za hemiju, biohemiju i zaštitu životne sredine, Novi Sad, 2016.</li> <li>2. Reference Document on the General Principles of Monitoring, European Commission, 2017.</li> <li>1. E. O. Okundayo (ED.): Environmental Monitoring, InTech, 2011.</li> </ol>			
<b>Number of classes of active teaching</b>			Other classes
Lectures: 3 (45)	Practice: 2 DON (30)	OFT:	SRW:
<b>Teaching methods</b> Lectures, laboratory exercises and consultation.			
<b>Assessment of knowledge (maximum of 100 points)</b>			
<b>Pre-exam obligations</b>	<b>Points</b>	<b>Final exam</b>	<b>points</b>
activity during lecture classes	5	written exam	40
practical teaching	15	oral exam	20
colloquia	20	.....	