

module code /
module title

Module D-CPMO/ Cell physiology of marine organisms: Cellular energy budget and metabolic fingerprinting

 date / version of the module
description

12.01.2020

1 INFORMATION ON THE MODULE	
1a	module code Module D-CPMO
1b	module title (German title) Klicken Sie hier, um Text einzugeben.
1c	module title (English title) Cell physiology of marine organisms: Cellular energy budget and metabolic fingerprinting
1d	credit points 6
1e	responsible for the module Prof. Dr. Janine Kirstein
1f	type of module elective module
1g	programs using the module M.Sc. Biochemistry and Molecular Biology and as Module MB E-6 in the M. Sc. Marine Biology
1h	organizational unit offering the module
1i	content-related prior knowledge or skills
1j	learning contents <p>Deepening the knowledge of cell physiology of marine ectotherms.</p> <p>Topics will be:</p> <ul style="list-style-type: none"> · Environmental impact on function of cells, mitochondria, enzymes · Aerobic and anaerobic energy metabolism · Analytical NMR techniques · Cellular energy budget and metabolite status <p>Methods being used:</p> <ul style="list-style-type: none"> · Isolation/Preparation of primary cells/tissue extracts

		<ul style="list-style-type: none"> Respirometry Photometry Nuclear Magnetic Resonance (NMR) spectroscopy 																																																																														
1k	learning outcomes/ competencies/ targeted competencies	<ul style="list-style-type: none"> Students understand the principles of cell metabolism under physiological control and stress conditions Students are able to conduct and perform scientific experiments Students can prepare primary cell/tissue extracts Students can conduct NMR spectroscopy, photometric and respiration measurements Students can understand, evaluate, present and discuss scientific data 																																																																														
1l	<p>calculation of student workload</p> <p><i>(part a: calculation of presence time and working hours)</i></p>	<p>The total amount of the presence time and working hours of the module has to be calculated additionally in the detailed calculation a) to c).</p> <p>a) detailed calculation: SWS / presence time/working hours in each course of the module</p> <table border="1"> <tr> <td><input checked="" type="checkbox"/></td> <td>lecture(s) with</td> <td>0,5</td> <td>SWS/ contact hours</td> <td>7</td> <td>hours of presence time</td> </tr> <tr> <td><input checked="" type="checkbox"/> 1</td> <td>seminar(s) with</td> <td>1,5</td> <td>SWS/ contact hours</td> <td>21</td> <td>hours of presence time</td> </tr> <tr> <td><input type="checkbox"/></td> <td>exercise(s) with</td> <td></td> <td>SWS/ contact hours</td> <td></td> <td>hours of presence time</td> </tr> <tr> <td><input type="checkbox"/></td> <td>internship(s) with</td> <td></td> <td>sum of working hours</td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td>seminar(s) with</td> <td></td> <td>SWS/ contact hours</td> <td></td> <td>total hours of presence time</td> </tr> <tr> <td><input checked="" type="checkbox"/> 1</td> <td>laboratory/laboratories with</td> <td>4</td> <td>SWS/ contact hours</td> <td>56</td> <td>total hours of presence time</td> </tr> <tr> <td><input type="checkbox"/></td> <td>tutorial(s) with</td> <td></td> <td>SWS/ contact hours</td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td>excursion(s) with</td> <td></td> <td>SWS contact hours in total</td> <td></td> <td>working hours</td> </tr> <tr> <td><input type="checkbox"/></td> <td colspan="5">other form of course (e.g. block seminar), namely this:</td> </tr> <tr> <td></td> <td colspan="5">Klicken Sie hier, um Text einzugeben.</td> </tr> <tr> <td></td> <td>with</td> <td>SWS / with totaly</td> <td>contact hours</td> <td><input type="checkbox"/> presence time</td> <td><input type="checkbox"/> working hours</td> </tr> <tr> <td></td> <td colspan="5">= sum of presence time and working hours:</td> </tr> <tr> <td></td> <td colspan="5">84</td> </tr> </table>	<input checked="" type="checkbox"/>	lecture(s) with	0,5	SWS/ contact hours	7	hours of presence time	<input checked="" type="checkbox"/> 1	seminar(s) with	1,5	SWS/ contact hours	21	hours of presence time	<input type="checkbox"/>	exercise(s) with		SWS/ contact hours		hours of presence time	<input type="checkbox"/>	internship(s) with		sum of working hours			<input type="checkbox"/>	seminar(s) with		SWS/ contact hours		total hours of presence time	<input checked="" type="checkbox"/> 1	laboratory/laboratories with	4	SWS/ contact hours	56	total hours of presence time	<input type="checkbox"/>	tutorial(s) with		SWS/ contact hours			<input type="checkbox"/>	excursion(s) with		SWS contact hours in total		working hours	<input type="checkbox"/>	other form of course (e.g. block seminar), namely this:						Klicken Sie hier, um Text einzugeben.						with	SWS / with totaly	contact hours	<input type="checkbox"/> presence time	<input type="checkbox"/> working hours		= sum of presence time and working hours:						84				
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	<p>calculation of student workload</p> <p><i>(part b: preparation time and follow-up work/self-study)</i></p>	<p>b) working hours for preparation/follow-up work of the course(s) and/or self-study</p> <p>= sum of working hours:</p> <p>26</p>
	<p>calculation of student workload</p> <p><i>(part c: exam preparation etc.)</i></p>	<p>c) exam preparation (incl. examination)</p> <p>= sum of working hours:</p> <p>70</p>
	<p>calculation of student workload</p> <p><i>(total amount of hours including a) - c))</i></p>	<p>Total amount of the presence time and working hours a) to c):</p> <p>180</p>
1m	<p>description of possible optional courses in the module</p>	<p><u>Can a student choose between different courses within the module?</u></p> <p>NO</p> <p><u>Short description of selection option</u></p> <p>Klicken Sie hier, um Text einzugeben.</p>
1n	<p>language(s) of instruction</p>	<p><input type="checkbox"/> German <input checked="" type="checkbox"/> English <input type="checkbox"/> Spanish <input type="checkbox"/> French</p> <p><input type="checkbox"/> Other, namely this:</p> <p>Klicken Sie hier, um Text einzugeben.</p>
1o	<p>frequency</p>	<p><i>(regular cycle module is offered) e.g.: winter semester, yearly or summer semester, yearly or each semester</i></p> <p>summer semester yearly</p> <p>Klicken Sie hier, um Text einzugeben.</p>
1p	<p>duration</p>	<p>one semester module</p> <p>Klicken Sie hier, um Text einzugeben.</p>
1q	<p>Literature <i>(optional)</i></p>	<p>Klicken Sie hier, um Text einzugeben.</p>
1r	<p>more information on the module <i>(optional)</i></p>	<p>Course instructor: Dr. Gisela Lannig-Bock, limited to 5 students, priority is given to BMB students</p>
2	<p>INFORMATION ON THE MODULE EXAMINATION (see also AT Art. 5 section 8)</p>	
2a	<p>type of examination</p>	<p><input checked="" type="checkbox"/> module exam; i.e. exam with only one component (MP)</p> <p><input type="checkbox"/> combination exam, i.e. exam with several components (administered by instructors) (KP)</p> <p><input type="checkbox"/> partial exam; i.e. exam with several components (administered by registrar) (TP)</p>

2b	exam components or prerequisites (type, number)	<p>PL = graded component of the examination SL = ungraded component of the examination, coursework PVL = prerequisite of the examination (see AT Art. 5 Section 10)</p> <p><input checked="" type="checkbox"/> PL 1 <input type="checkbox"/> SL <input type="checkbox"/> PVL justification</p> <p>If necessary, further explanations:</p> <p>Portfolio, composed of oral presentation (seminar talk, 40%) and presentation of a scientific poster (60%)</p> <p>Seminar talk: each student will give an oral presentation of a scientific publication. A list of scientific publications will be handed out at the beginning of the course.</p> <p>Presentation of a scientific poster: the students will prepare and present a scientific poster of the data set that they elaborated within the course.</p>
2c	Give this information for combination examinations only: Weights (in percentage) of component grades	<p>PL 1:</p> <p>PL 2:</p> <p>PL 3: Klicken Sie hier, um Text einzugeben.</p> <p>PL 4: Klicken Sie hier, um Text einzugeben.</p> <p>If necessary, further comments:</p>
2d	form of examination (see AT BPO/AT MPO Art. 8, 9 and 10)	<p><input type="checkbox"/> Assignment <input type="checkbox"/> Oral examination (single) <input type="checkbox"/> Presentation, oral</p> <p><input type="checkbox"/> Written examination <input type="checkbox"/> Group examination, oral <input type="checkbox"/> Presentation and written assignment</p> <p><input checked="" type="checkbox"/> Portfolio <input type="checkbox"/> Project report <input type="checkbox"/> Bachelor Thesis</p> <p><input type="checkbox"/> Internship report <input type="checkbox"/> Colloquium <input type="checkbox"/> Master Thesis</p> <p><input type="checkbox"/> Other (concrete definition is given in the examination regulations):</p> <p>Klicken Sie hier, um Text einzugeben.</p>
2e	language(s) of instruction	<p><input type="checkbox"/> German <input checked="" type="checkbox"/> English <input type="checkbox"/> Spanish <input type="checkbox"/> French</p> <p><input type="checkbox"/> Other, namely this:</p> <p>Klicken Sie hier, um Text einzugeben.</p>