

2.00 credits

12.0 h + 18.0 h

Q2

Language :	French
Place of the course	Louvain-la-Neuve
Learning outcomes	
Evaluation methods	<p>Oral examination, individual, during the session.</p> <p>The student have to demonstrate his understanding of the elements of experimental design, in particular by applying it to an experiment conducted in practical work (activity A1), to the analysis of articles (activity A2) and/or to the description of the design of an experiment related to his master thesis (activity A3).</p>
Teaching methods	<p>Presentation of experimental design notions during ex cathedra presentations.</p> <p>The sessions take place in Namur or Louvain-la-Neuve (according to the schedule given to students at the start of the semester).</p> <p>The 18 hours of practical work are divided into three activities:</p> <ul style="list-style-type: none"> <li>• A1: design of a complete experiment</li> <li>• A2: analysis of the experimental design of published studies</li> <li>• A3: critical analysis of the experiment design of the master thesis</li> </ul> <p>The work carried out during the practical work sessions constitutes a basis for the oral assessment.</p>
Content	<p><b>Objective</b> : Acquire know-how in evaluating the design of an experience.</p> <p><b>Reference book</b> : Experimental Design for the Life Sciences, Fourth Edition, Graeme D. Ruxton and Nick Colegrave.</p> <p><b>Table of contents</b> of the reference book :</p> <ol style="list-style-type: none"> <li>1: Why you should care about design?</li> <li>2: Starting with a well-defined hypothesis</li> <li>3: Selecting the broad design of your study</li> <li>4: Between-individual variation, replication, and sampling</li> <li>5: Pseudoreplication</li> <li>6: Sample size, power, and efficient design</li> <li>7: The simplest type of experimental design: completely randomized single-factor</li> <li>8: Experiments with several factors (factorial designs)</li> <li>9: Beyond complete randomization: blocking and covariates</li> <li>10: Within-subject designs</li> <li>11: Taking measurements</li> </ol>
Inline resources	<p><b>See the moodle site</b> :</p> <p><a href="https://moodleucl.uclouvain.be/course/view.php?id=12613">https://moodleucl.uclouvain.be/course/view.php?id=12613</a></p>
Faculty or entity in charge	BIOL

<b>Programmes containing this learning unit (UE)</b>				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Biology of Organisms and Ecology	BOE2M	2		