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|--------------------------------------|---|------------------------|------|----------------------------|-------------|
| <b>Course title</b>                  | Master Thesis   |                        |      |                            |             |
| <b>Course code</b>                   | MCB690  |                        |      |                            |             |
| <b>Course type</b>                   | Compulsory  |                        |      |                            |             |
| <b>Level</b>                         | Master's (2nd Cycle)  |                        |      |                            |             |
| <b>Year / Semester</b>               | 1st Year / 3rd Semester   |                        |      |                            |             |
| <b>Teacher's name</b>                | TBA   |                        |      |                            |             |
| <b>ECTS</b>                          | 10  | <b>Lectures / week</b> | None | <b>Laboratories / week</b> | As required |
| <b>Course purpose and objectives</b> | <p>The main objective of the Master Thesis course is to provide students with all the necessary skills required to independently design, organize and implement an experimental research project or in silico research project or literature review in the field of Cancer Biology and related disciplines. This cancer-related research project can be wet lab-based, in silico or literature review, depending on the topic. The ultimate goal is the submission to the thesis committee a scientific manuscript/essay describing the theoretical background, the experimental methodology, data analysis and interpretation in a cutting-edge in the field of Cancer Biology. Finally, the student will present and defend his/her work in an oral public presentation under the guidance of the three-member advisory committee and the supervisor of thesis project.</p>   |                        |      |                            |             |
| <b>Learning outcomes</b>             | <p>Upon successful completion of the Master Thesis course, students should be able to:</p> <ul style="list-style-type: none"> <li>• Recognize and describe a specialized area in the field of cancer biology and/or therapy.</li> <li>• Compose a summary of the literature on the selected topic in the field of cancer biology by selecting, reading and understanding the appropriate research articles through database searching.</li> <li>• Plan, organize, and implement an experimental wet lab-based or in silico-based research project in the field of cancer-related sciences according to international standards.</li> <li>• Clearly present the problem, formulate hypotheses as well as the aims of their study</li> <li>• Select, design and organize the appropriate methodology to be used during the implementation of the study.</li> <li>• Demonstrate expertise in independently performing fundamental wet-lab experimental techniques in the field of molecular and cellular cancer biology.</li> <li>• Propose troubleshooting approaches to overcome experimental issues that may arise.</li> <li>• Analyze the results obtained and calculate potential statistically significant associations between compared groups.</li> <li>• Interpret, evaluate and discuss the findings of the study.</li> <li>• Draw biologically meaningful conclusions related to the current literature.</li> <li>• Produce original research work</li> </ul> |                        |      |                            |             |

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|                             | <ul style="list-style-type: none"> <li>• Prepare the final thesis dissertation in written form as well as defend it during a public oral presentation.</li> </ul>  |                      |      |
| <b>Prerequisites</b>        | Completed all courses of 1st and 2nd semester  | <b>Co-requisites</b> | None |
| <b>Course content</b>       | <p><b>Description:</b></p> <ul style="list-style-type: none"> <li>• <b>Supervision and guidance</b></li> <li>• Regular weekly meetings will take place between the student and the supervisor throughout the implementation period in order to provide guidance, organize the experimental methodology, data analysis and activities to be performed to complete the project.</li> <li>• The student will regularly obtain feedback from his/her advisor on the status of the work in progress.</li> <li>• <b>Implementation of the experimental research project</b></li> <li>• Initially, the student will read and thoroughly comprehend the literature pertinent to the Master Thesis research project topic.</li> <li>• The student will work with his/her advisor in order to select and explicitly outline the detailed experimental methodology to be performed.</li> <li>• The student will work independently in the lab in order to implement the research project by applying fundamental molecular and cellular biology techniques, such as cell culture, genetic manipulation of model systems, nucleic acid and protein purification, gene expression and protein analysis.</li> <li>• The student will analyze the data obtained by applying basic statistical methodologies and therefore interpret, evaluate and discuss the findings of the study.</li> <li>• The student will compose the Master Thesis in written format, according to the instructions given and explained in the pertinent Master Thesis Guide.</li> <li>• <b>Thesis Presentation:</b></li> <li>• Upon submission of the Master Thesis to the three-member advisory committee, the student will be informed regarding the date of the oral presentation of his/her work.</li> <li>• Following the oral presentation, evaluation and successful defense of the Master Thesis by the three-member advisory committee, the student will submit the final version of his/her Master Thesis to the Department secretary in order to obtain a grade.</li> <li>• Detailed description of the content and course requirements are listed in the pertinent Master Thesis Guide.</li> </ul> |                      |      |
| <b>Teaching methodology</b> | Face-to-face   |                      |      |
| <b>Bibliography</b>         | <p>Successful Dissertations and Theses: A Guide to Graduate Student Research from Proposal to Completion (print), David Madsen, Wiley</p> <p><a href="https://www.wiley.com/en-us/Successful+Dissertations+and+Theses%3A+A+Guide+to+Graduate+Student+Research+from+Proposal+to+Completion%2C+2nd+Edition-p-9781555423896">https://www.wiley.com/en-us/Successful+Dissertations+and+Theses%3A+A+Guide+to+Graduate+Student+Research+from+Proposal+to+Completion%2C+2nd+Edition-p-9781555423896</a></p>   |                      |      |

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| <b>Assessment</b> | Written presentation | 60%         |
|                   | Oral presentation    | 40%         |
|                   | <b>Total</b>         | <b>100%</b> |
| <b>Language</b>   | English              |             |