

Master Thesis

Title	Master Thesis
Semester	E2023
Master programme in	Mathematical Bioscience
Type of activity	Master Thesis
Teaching language	English
Study regulation	Read about the Master Programme and find the Study Regulations at ruc.dk Læs mere om uddannelsen og find din studieordning på ruc.dk

REGISTRATION AND STUDY ADMINISTRATIVE

Registration	Tilmelding sker via STADS-Selvbetjening indenfor annonceret tilmeldingsperiode, som du kan se på Studieadministrationens hjemmeside Registration through STADS-Selvbetjening within the announced registration period, as you can see on the Studyadministration homepage .
Number of participants	
ECTS	30
Responsible for the activity	Jesper Schmidt Hansen (jschmidt@ruc.dk)
Head of study	Jesper Schmidt Hansen (jschmidt@ruc.dk)
Teachers	
Study administration	INM Registration & Exams (inm-exams@ruc.dk)
Exam code(s)	U60172

ACADEMIC CONTENT

Overall objective	The overall purpose of the master thesis is that the student explores a current/exemplary and concrete research challenge that originates from biology. The exploration must include mathematical formalism and reasoning, for example, through development of a model.
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Detailed description of content	In dialogue with supervisor the student must choose a scientific problem and through problem-oriented project learning and interdisciplinary independently work with the problem. This includes apply the necessary biological and mathematical competencies and skills needed to critically analyse, understand, and present complex biological data as well as to develop and implement mathematical models of biological systems.
Course material and Reading list	Students themselves select relevant literature for their project work.
Overall plan and expected work effort	Master Thesis 30 ECTS / 810 hours <ul style="list-style-type: none"> • Master Thesis Seminar: 4 hours • Exam and assessment: 1 hour • Supervision: 7 / 15 hours (theoretical / experimental) • Report writing: 200 hours • Literature search: 150 hours • Practical project work (laboratory, model design, analysis, field work): 400 hours • Exam preparation: 40 hours
Format	
Evaluation and feedback	All master thesis' processes will include ongoing dialogue-based (oral) evaluation between the students and the supervisor. Both students and supervisors are expected to provide constructive feedback and viewpoints during the process. Feedback concerning the academic content and progression, process and collaboration. When the master thesis is handed in, there will also be an evaluation through a questionnaire in SurveyXact concerning the master thesis process and the master program in general. The Study Board will handle all evaluations. Furthermore, students can, in accordance with RUCs 'feel free to state your views' strategy through their representatives at the study board, send evaluations, comments or insights form their project process to the study board during or after the master thesis process.
Programme	The student must attend the preparatory thesis seminar. Information available on study and moodle.
ASSESSMENT	
Overall learning outcomes	<p>After the master thesis the student will be able to</p> <ul style="list-style-type: none"> • independently analyse, categorise, discuss, argue, reflect and solve biological research challenges based mathematical formalism and reasoning • independently and critically select mathematical and biological and general natural science sources, including literature, theory, models, and methods in order to solve biological research challenges • communicate research questions, formulate biological hypotheses, results, and conclusions to both biologists and mathematicians in a multi-disciplinary and critically reflected manner • independently organise workflow, plan, test, and conclude on a problem-oriented research question

Form of examination	<p>Master thesis written individually or in a group. Permitted group size: 2-4 students.</p> <p>The student(s) can choose whether the assessment should be based on solely the written product or on both the written product and the oral exam.</p> <p>The character limits of the master thesis are: for 1 student: 24,000-367,200 characters, including spaces. For 2 students: 24,000-367,200 characters, including spaces. For 3 students: 24,000-367,200 characters, including spaces. For 4 students: 24,000-367,200 characters, including spaces.</p> <p>The character limits include the cover, table of contents, summary, bibliography, figures and other illustrations, but exclude any appendices.</p> <p>The master thesis must include a summary. The summary can either be written in English or Danish. The summary is included in the overall assessment.</p> <p>Before submitting a master thesis written by a group, that have chosen an assessment solely based on the written product, each member of the group must clearly indicate which part(s) of the thesis they are responsible for. All group members are responsible for the introduction, conclusion and summary.</p> <p>The oral exam is individual for students that have written the thesis alone, or students that have requested an individual exam. All other oral master thesis exams are conducted as group exams.</p> <p>Time allowed for exam including time used for assessment for: 1 student: 30 minutes. 2 students: 60 minutes. 3 students: 75 minutes. 4 students: 90 minutes.</p> <p>There will be an individual assessment of each student's performance. The assessment is an overall assessment of the master thesis and, where relevant, the oral performance.</p> <p>Writing and spelling skills in the thesis are part of the assessment.</p> <p>Permitted support and preparation materials at the oral exam: All.</p> <p>Assessment: 7-point grading scale. Moderation: External examiner.</p>
Form of Re-examination	Samme som ordinær eksamen / same form as ordinary exam
Type of examination in special cases	
Examination and assessment criteria	<p>Master thesis written individually or in a group. Permitted group size: 2-4 students.</p> <p>The student(s) can choose whether the assessment should be based on solely the written product or on both the written product and the oral exam.</p>

The assessment criteria of the written part

- independently analyse, categorise, discuss, argue, reflect and solve biological research challenges based mathematical formalism and reasoning
- independently and critically select mathematical and biological and general natural science sources, including literature, theory, models, and methods in order to solve biological research challenges
- communicate research questions, formulate biological hypotheses, results, and conclusions to both biologists and mathematicians in a multi-disciplinary and critically reflected manner
- independently organise workflow, plan, test, and conclude on a problem-oriented research question

The assessment of the oral exam is based on the student's ability to meet the criteria mentioned above and their ability to

- clearly present and communicate the scientific content of the project
- engage in a scientific dialogue and discussion with the supervisor and assessor

Furthermore, whether the performance meets all formal requirements in regard to both for the written og oral exam.

Exam code(s) : U60172

Course days:

Hold: 1

Hand-in of Thesis (starting August 2023)

time 02-01-2024 10:00 til
02-01-2024 10:00

forberedelsesnorm ikke valgt

forberedelsesnorm D-VIP ikke valgt