

Course Guide

BSc Thesis Animal Sciences (YAS-80312)

2023-2024

This course guide contains two parts:

- Part A contains general information that applies for BSc thesis YAS-80312 within the BAS programme and involved chair groups.
- Part B contains specific regulations for the thesis in your chair group.

Important Documents are mentioned at the end of the course guide. For students these are provided via Brightspace. Supervisors receive them by e-mail.

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Part A: general guidelines and procedures

1. Introduction

This thesis guide describes the procedures for the thesis supervision and writing process of the chair groups of Wageningen University involved in the Bachelor Thesis Animal Sciences (YAS-80312). These chair groups are:

ABG, ANU, ADP, AFI, APS, HAP, CBI, EZO, BHE, HMI, MAE, QVE, WEC

The thesis guide is meant for staff and students. It includes information about the goal of the thesis, procedures before starting and during the thesis and the assessment procedure.

2. Thesis course profile

The BSc thesis enables the student to put the acquired knowledge and skills into practice by individually and independently conducting a research project in the field of his/her programme.

Language: English
Credits: 12 ECTS
Period: 1+2 or 5+6

In principle, the BSc thesis is done half-time over 2 periods of 8 weeks each, with a course next to it in each period. Should you nevertheless intend to do the thesis full-time in one period (strongly discouraged in view of the experiences in recent years), please consult with the relevant chair group/supervisor if full-time supervision can be guaranteed. This is to prevent you from being assigned a subject that cannot be done full-time. There may be various reasons for this, including stable/lab work that has a certain lead time, supervisors who have their planning (education, conferences, etc).

Advanced Statistics (MAT-20306) and Personal Development and Academic Skills (YAS-21303) should be followed prior to the BSc-thesis Animal Sciences (YAS-80312) or at the same period in which the thesis is started.

3. Contact persons

The BSc thesis coordinator is Lisette Graat (Lisette.Graat@wur.nl).

The supervision of your thesis is the responsibility of a Wageningen University Chair Group. The Chair Groups that are entitled to supervise your YAS-80312 thesis project have a contact person for the BSc thesis:

ABG	Richard.Crooijmans@wur.nl
ADP	office.ADP@wur.nl
AFI	Johan.Schrama@wur.nl
ANU	Guido.Bosch@wur.nl
APS	Theo.Viets@wur.nl
HAP	Sander.Grefte@wur.nl
BHE	Bonne.Beerda@wur.nl
CBI	Gosia.Teodorowicz@wur.nl
EZO	Sander.Gussekkloo@wur.nl
HMI	Peter.vanBaarlen@wur.nl
MAE	Diede.Maas@wur.nl
QVE	Bart.vandenBorne@wur.nl
WEC	Joost.deJong@wur.nl

For the supervision of his/her thesis, a student can contact one of the chair groups within Animal Sciences, but also other chair groups of Wageningen University. It is agreed that at least 50% of the supervision must be provided by one of the above chair groups of Animal Sciences. However, this must be discussed beforehand with the coordinator of the BSc thesis (Lisette Graat), and can only start if the coordinator has given permission.

It is also possible to do your BSc thesis abroad. For this you need to contact Francine Wartena (Francine.Wartena@wur.nl). She will help in arranging and assign you a WUR supervisor as well.

In case of problems that cannot be solved with your supervisor or chair group contact person, please contact the coordinator as soon as possible (Lisette Graat).

4. Learning outcomes

After successful completion of your thesis, you are expected to be able to:

1. write a research proposal, including the wider scientific context, identification of the knowledge gap, formulation of research questions, aims and objectives, and design of the project including approach, methods and tools;
2. organize the individual management of a research question through experimental research, literature study, laboratory analyses or analyses of data described in the research plan;
3. analyse and synthesize the data, in order to answer the research questions;
4. formulate answers to the research questions that are supported by the research outcomes, pay attention to potential limitations, and relate the outcomes to the wider scientific context;
5. provide a scientific thesis on the research both in writing and in oral presentation;
6. work in compliance with academic codes of conduct, and with proper management of time and resources;
7. make use of input and feedback for executing the research project.

5. Study load

As a guideline, 1 credit (ECTS) equals 28 hours. The thesis requires therefore 84 half days of work. The experience is that this time is certainly necessary! A good planning, in full consultation with the supervisor, is therefore a requirement and should be included in the learning agreement.

6. Prerequisites

This course is subject to a formal intake procedure by the examiners. In order to start the bachelor thesis, the student must have at least 102 credits of the BAS program (compulsory and restricted optional courses). This includes all credits from the first year (see EER, Education and Examination Regulations Wageningen University).

Finally, you should be officially registered as a Wageningen University BSc student.

7. How to find a thesis subject?

There are differences between Chair Groups how a thesis can be found and should be arranged.

As thesis subjects need to be prepared and arranged a few months before the start of the thesis the procedure is as following. The coordinator sends an e-mail to candidate students in April/May of the 2nd year students (or older) to register for either period 1+2 or period 5+6 in the next academic year. Subsequently, a list of thesis subjects is being e-mailed to students that have registered with the coordinator at either the end of period 6 (for starting in period 1) or end of January (for starting in period 5). Requirements (see at point 6) will be checked either after period 6 (for starting in P1) or period 2 (for starting in P5). If the requirements have not been met yet, the subjects of the thesis are assigned conditionally by the coordinator. If the study progress requirement is fulfilled just prior to period 1 respectively period 5, the subjects are assigned definitively. The student is only allowed to start after permission of the study adviser.

From the list of subjects the student chooses 4 topics that are preferred. On some topics multiple students can be placed. If several students have the same topic as 1st preference or 2nd preference, a lottery will take place. Details are given in the mail with the list of thesis subjects.

8. Supervision

Each Chair Group organizes the appointment of a supervisor differently. Contact the thesis coordinator of the respective chair group to check their specific procedure.

The first (main) supervisor is always a staff member of the responsible Chair Group, but frequently, a second Chair Group may be involved in the supervision of a BSc thesis. All Chair Groups of Wageningen University use a thesis Learning Agreement which includes details of all agreements regarding supervision. Students have to contact their primary supervisor at least once a week, unless circumstances do not allow such a frequency. The actual frequency of meetings may vary depending on the nature of the thesis project. Although the thesis project is a learning experience, students are encouraged to act independently as much as possible when resolving problems and in difficult situations. However, one supervisor will always be available for feedback and support.

Which Chair Groups are allowed to supervise my thesis?

These Chair Groups are: ABG, ADP, AFI, ANU, APS, HAP, BHE, CBI, EZO, HMI, MAE, QVE, WEC.

ABG as well as APS organize a joint kick-off meeting for their students. Ask their contact persons for the exact date.

For supervisors/examiners: Please keep in mind that the difference between a BSc and MSc thesis is that a BSc thesis is more intensively supervised, has a smaller size (12 ECTS) and is a less complex project than a MSc thesis (in most programmes 30-36 ECTS).

9. Thesis activities

The thesis is the final compulsory part of the Bachelor programme. The thesis can be carried out at one or more WU chair groups, but also at a company. In the case of research at a company, this always takes place under the supervision of a supervisor from a Chair Group entitled to supervise the BSc thesis YAS-80312. This is therefore not the same as an internship assignment.

By means of the thesis different aspects of the student's knowledge and skills are tested:

- being able to work individually and independently
- be able to oversee the task; plan and carry out work in the time available
- literature review
- written and oral report
- mastering a discipline: apply/integrate theoretical knowledge

A critical assessment of these aspects by the supervisor and examiner afterwards gives the student an impression of his/her level of scientific knowledge and skills, and provides him/her with guidelines to pay extra attention to less well-assessed aspects during the MSc phase later.

N.B. The use of the Endnote programme to generate reference lists is not one of the learning objectives. However, it is a useful tool, and there are several tutorials on the internet to work with the program. On the site of the library of Wageningen University there are also references to some tutorials.

Research or design proposal/planning

At the start of the thesis, the students should prepare themselves by reading literature related to the project. After this initial orientation, the student formulates a research question/hypothesis and the principle approach to the research or design proposal. This then has to be discussed in depth with the supervisor.

The research or design proposal should include questions supported by up-to-date literature related to the topic, an explicit and specific method for tackling the proposed questions, a project plan and (if applicable) an estimate of the required budget. Ask your supervisor for an outline of the BSc thesis proposal.

If drafted correctly, sections of the proposal can form part of the final thesis report (e.g. the Introduction and Methodology section). However, the student cannot start conducting the research project before the research or design proposal/planning has been approved by the supervisor(s).

Presentation research proposal

When the proposal is completed, the student may be asked to present the research proposal to other BSc students and staff members to gain feedback and suggestions for improvement. Discuss the options for presentation with the supervisor. The presentation should be given in English in order to allow international students and staff members to participate in the discussion.

Carrying out the research project or research-based design project

The student should document the research activities, findings and sources carefully, including seemingly small details. We recommend the student keeping in close contact with the supervisor throughout the project. Should unforeseeable circumstances occur, the student will have to adapt the project plan; any changes in planning must be discussed with and approved by the supervisor. In experimental research, a lab or field journal has to be kept. Ask the supervisor for the guidelines for keeping a lab journal.

Discuss possible confidentiality issues with the supervisor. In principle, your BSc thesis is not considered to be confidential, however if part of your results is used in contract research and research which is subject to patenting, then confidentiality agreements do apply. The student should be informed by the thesis supervisor prior to starting if your thesis is part of a contract research programme or a patent procedure.

Meetings

During the thesis period the student will participate in work discussions and other meetings of the Chair Group. The supervisor will inform the student on dates and times and other relevant matters.

Many Chair Groups have weekly work discussions in which research progress of all group members is discussed. Depending on the Chair Group, the student may be asked to join the discussion group that is related to the research topic. Ask the supervisor when Chair Group holds discussion sessions. Both students and staff present their results to the other members of the Chair Group during colloquia. In general, students have to attend these colloquia.

Some Chair Groups organize literature discussions on papers that are relevant for their field, or organize seminars during which guest researchers present their research or designs.

Handling feedback

The Chair Group at which the thesis is performed may offer participation in a thesis ring or other peer-learning sessions. Using this input will help to further develop knowledge, skills and attitude and make the best of the project. Ask the supervisor for more information.

Progress evaluation

The progress evaluation is a meeting between student and supervisor halfway through the project. In this meeting all aspects of the thesis project at that point (project plan, supervision, performance) are discussed. If the student experiences any shortcomings in supervision, then this is a good moment to discuss it and agree improvement. In case of severe problems regarding dedication, skills, knowledge or communication, the daily supervisor, together with the thesis examiner, may decide to terminate the thesis project.

The thesis assessment form and rubric can be used for the progress evaluation and provides a clear picture of what goes well and where improvement is needed. If progress has not been achieved as planned due to other reasons (e.g. illness, problems in supervision), the planning of the rest of the project may need to be adjusted, and new feasible end goals defined.

Thesis report

The research or research-based design should result in a comprehensive, consistent and concise thesis report in English. It is important to realise that the thesis is not a chronological account of the project or a summary of the lab-journal. Furthermore, as good scientific writing dictates, the results should be properly organised and data should be correctly processed, analysed and presented. In principle a BSc thesis report should contain the elements of a scientific paper in your discipline. In the course Personal Development and Academic Skills (YAS-21303) one of the learning objectives is on critical reading and writing in science. This will prepare the students for writing their thesis.

In some cases, it may be possible to write the thesis in the format of a scientific article, which is usually much shorter than a regular thesis report. Discuss this with the supervisor. This should be included in the thesis learning agreement form.

Each chair group often has its own study guide on what the thesis should look like; e.g. the size and font size of the thesis. It is very important to make agreements about this in the first meeting with the supervisor and include it in the learning agreement.

Oral presentation (Colloquium)

Once the student and its supervisor have agreed on the final version of the thesis report, the student is required to present the thesis and major research / design findings to other students and staff members of the Chair Group. Chair Groups usually have a fixed schedule for these presentations. Appointments for a date and the publication of the announcement should be made well in advance. Discuss the structure and content of the presentation with the supervisor in advance, so he/she can offer feedback and advice. The presentation has to be in English so international staff and students can participate in the discussion. The oral presentation will be assessed on graphical and verbal presentation, and ability to answer questions. Ask the supervisor for the arrangement and assessment of the colloquium.

Oral examination

The final oral examination is a discussion with the supervisor, a second reviewer/examiner and in some cases, a supervisor outside the chair group. The discussion focuses on the contents of the thesis, in which your knowledge, understanding, insights, as well as creativity and scientific attitude are evaluated. The student is expected to be able to place the results and conclusions in the context of the field of science and to indicate possibilities for applying the findings in practice. In addition, after the examination the student will receive the reasoning behind the thesis grade including specific feedback on all aspects of the assessment. The student has to make an appointment for the oral examination well in advance. Ask the supervisor for the Chair Group rules on this.

Plagiarism & use of generative artificial intelligence

Plagiarism is considered to be a serious form of fraud. The student is expected to be familiar with proper referencing techniques before starting to write the thesis and the student is advised to consult relevant information available on the WUR-website (e.g. [‘Citing and referencing’](#)). Staff is expected to screen all writings carefully for plagiarism; the university has made software available for this purpose. In case of suspicion of plagiarism, either of text, figures, models or data, the Examining Board will be informed. In the Rules and regulations of the Examining Board procedures and sanctions regarding fraud are described. The use of generative artificial intelligence to create ready-made content in assignments is considered fraud unless this use of AI is explicitly permitted by the examiner in the instructions for the assignment.

10. Assessment of the thesis

For the Wageningen University assessment, supervisors/examiners use the BSc thesis YAS-80312 Assessment Form of the current academic year. In the assessment the student is evaluated on 3 main categories: Research competence, BSc Thesis report, and Colloquium and defence of thesis.

The corresponding rubric is used as a tool to determine the appropriate mark for each criterion within a main category. Each main category should have at least 5.5 on average to pass. The final grade is based on all categories (performance (30%), thesis report (60%), oral presentation (colloquium and oral defence (10%)) and should be at least 5.5.

Students are advised to read the rubric thoroughly as it clarifies the requirements of a thesis and the expectations of the supervisor.

The assessment strategy (Table 1) shows the relation between the learning outcomes and the different parts of the assessment.

Table 1. Assessment strategy of the BSc thesis.

Learning Outcomes	Assessment			
	Performance	Research Report	Oral presentation	Oral examination
1 Develop a research plan, including the wider scientific context, identification of the knowledge gap, formulation of research questions, aims and objectives, and design of the project including approach, methods and tools.		X		X
2 Organize the individual management of a research question through experimental research, literature study, laboratory analyses or analyses of data described in the research plan	X	X		X
3 Analyse and synthesize the data, in order to answer the research questions.		X	X	X
4 Formulate answers to the research questions that are supported by the research outcomes, pay attention to potential limitations, and relate the outcomes to the wider scientific context.		X	X	X
5 Provide a scientific thesis on the research both in writing and in oral presentation		X	X	
6 Work in compliance with academic codes of conduct, and with proper management of time and resources.	X			X
7 Make use of input and feedback for executing the research project.	X			
	30%	60%		10%

11. Delay and possibility to do a resit

The start and end date of the thesis is registered in the learning agreement. In order to pass the course, the student usually gets two possibilities to discuss a complete draft report before handing in the final report (Ask the supervisor for details on this). If the final report is insufficient, but the supervisor expects that the student will be able to finish the project within two extra months, the final date will be extended. Afterwards the final report will be graded and the mark will be registered. If the student is not able to hand in a satisfactory report within two extra months he should start all over again (not necessarily with the same supervisor, or in the same chair group). If the student should start all over again, this is still considered as a resit.

12. Evaluation of your thesis period

Following the assessment, Wageningen University will send the student a link to an online evaluation questionnaire. Please complete this, even if the work has been finished. The results of the questionnaires help us to improve the quality of the thesis supervision and organisation, and to identify potential (or actual) problems. The evaluation is anonymous.

13. Checklist for organising a thesis

- ✓ Check whether you are allowed to start your thesis
- ✓ Find a thesis topic (after having received the mail with topics from the coordinator)
- ✓ After the allocation of topics the coordinator will enrol you in Osiris and Brightspace
- ✓ Make a start appointment with the supervisor to discuss the thesis topic
- ✓ Fill in the Learning Agreement of the BSc thesis YAS-80312
- ✓ Hand in the by the supervisor approved Learning Agreement to the secretary of the supervising Chair Group
- ✓ Discuss the requirements for your research proposal with your supervisor (length, depth etc.)
- ✓ Write a research or design proposal
- ✓ Ask your supervisor for approval of the research/design proposal
- ✓ If applicable: arrange a date for presentation of the research/design proposal
- ✓ Arrange a date for an intermediate evaluation
- ✓ Arrange dates for the final assessment (handing in thesis report, final colloquium, oral examination)
- ✓ After approval by your supervisor: Provide a PDF and MS word file of the final version of your thesis to the supervisor, examiner and secretarial office of the Chair Group
- ✓ The supervisor has the thesis plus assessment form digitally archived by the secretariat, and e-mails the assessment form (signed by both the daily supervisor and the second assessor of both the thesis and the oral examination (=examiner of the chair group) to the coordinator Lisette Graat
- ✓ The coordinator will do the final check and registers the grade. As soon as this is done, the supervisor, and secretariat of the Chair Group involved, as well as the student, will receive an e-mail from the coordinator.

Part B: Additional regulations and guidelines

Additional regulations and guidelines may be applicable for specific thesis and can be provided by the Chair Group. This could for instance concern matters like:

- Safety regulations (building, laboratory, equipment, materials, data, etc.)
- Guidelines for keeping record of your research (keeping a lab journal, or other means)
- Guidelines for handling literature references
- Guidelines for writing a thesis report
- Guidelines for giving an oral presentation (for colloquia, seminars, etc.)

Ask the supervisor for Chair Group regulations.

If the statistical analysis program SAS 9.4 is needed to analyse data, the students can use SAS 9.4 via MyWorkspace. Other programmes can be downloaded via the WUR app store.

Important Documents (Course guide, Learning Agreement, Assessment Form, Rubric)

- *Course Guide BSc Thesis Animal Sciences (YAS-80312) Wageningen University (adapted for 2023-2024)*
- *Learning Agreement BSc Thesis Animal Sciences (YAS-80312) Wageningen University*
- *Assessment form BSc Thesis Animal Sciences (YAS-80312) Wageningen University (2023-2024)*
- *Rubric to use the assessment form BSc Thesis Animal Sciences (YAS-80312) (2023-2024)*

N.B.

These documents will be send to the supervisors. For the registered students the documents can be found on Brightspace.

A recommended handbook for writing in biology is:

Knisely, K., 2013. A student handbook for writing in biology, 4th edition, Sinauer Associates, Inc. Sunderland, Massachusetts, USA, 318 pp.