



Landbúnaðarháskóli Íslands
Agricultural University of Iceland

**FACULTY OF ENVIRONMENTAL AND FOREST
SCIENCES**

SELF-REVIEW REPORT

Version 2 11.06.2021





Summary

During the spring semester 2021, the Faculty of Environmental and Forest Sciences at the Agricultural University of Iceland conducted a self-evaluation assessment following the recommendations of the Icelandic Quality Enhancement Framework (QEF2). A Self-Evaluation Committee was established for this task, which included the Faculty Head, three Programme Coordinators and three student representatives. In addition, three foreign experts who worked across the three Faculties at AUÍ provided valuable feedback to the review process and report. The report includes research and teaching within the Faculty, focusing on Study Programmes at the university level.

This report is the first evaluation of the Faculty of Environmental and Forest Sciences since it was established in January 2020, and it has provided a good exercise of self-reflection and will serve as a reference point for the development of the Faculty in the future. Clearly, the Faculty needs to define a coherent strategy and set clear priorities for teaching and research for the future. Overall, teaching and learning within the Faculty provide good opportunities for students, who are generally satisfied with the education they receive. A revision of the learning outcomes and the structure of the programmes, as is currently under way in the BSc in Natural and Environmental Sciences, will help improve the profile of the Faculty and the university as a whole. The Faculty is active in research and excels in the fields of ecological restoration, ecosystem ecology, land use change, wetland ecology, soil science and atmospheric sciences. The Faculty needs, however, to develop its research strategy and priorities for research, as well as a recruitment plan to strengthen priority areas. Setting specific targets and goals, following the SMART principles (that is, goals that are Specific, Measurable, Achievable, Realistic and Timely), will help in tracking progress and measuring the impact of the Faculty.

This review has been invaluable as a point of self-reflection on where the Faculty is today and where we want it to be in the future. The goals and action points set out in this report will be followed up and presented annually at the Faculty meetings and revised as needed, so that the report serves as a living document that helps strengthen our work.

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1 Faculty of Environmental and Forest Sciences – Faculty Level

1.1 Introduction

The Faculty of Environmental and Forest Sciences at the Agricultural University of Iceland (AUI) carried out a self-evaluation assessment during the spring semester of 2021. This assessment is in accordance with the Icelandic Quality Enhancement Framework at the University level in Iceland (QEF2) and the guidelines of the Agricultural University for the organisation, schedule and process of an institution-led review of Faculties and interdisciplinary programmes. To conduct this assessment, a Self-evaluation Committee was established in January 2021. The members of this committee were:

- Isabel C Barrio, isabel@lbhi.is, Head of Faculty, Programme Coordinator of the MSc Environmental Changes at Higher Latitudes (EnCHIL)
- Bjarni Diðrik Sigurðsson, bjarni@lbhi.is, Professor, Coordinator of Graduate Studies and Programme Coordinator of the BSc in Forest Sciences (until March 2021)
- Páll Sigurðsson, palls@lbhi.is, Research Associate, Programme Coordinator of the BSc in Forest Sciences (from March 2021)
- Ragnhildur Helga Jónsdóttir, ragnhildurhj@lbhi.is, Adjunct, Programme Coordinator of the BSc in Natural and Environmental Sciences
- Marinó Muggur Þorbjarnarson, nem.mmt1@lbhi.is, BSc student representative
- Jónína Sigríður Þorláksdóttir, joninasth@lbhi.is, graduate student representative
- Eyrún Gyða Gunnlaugsdóttir, nem.egg3@lbhi.is, representative of former students

In addition, three foreign experts who worked across the three Faculties at AUI contributed to the work of the committee:

- Ågot Aakra, agot.aakra@nmbu.no, Dean of the Faculty of Chemistry, Biotechnology and Food Science, Norwegian University of Life Sciences
- Dr. Ülle Jaakma, ylle.jaakma@emu.ee, Vice-Rector of Research at the Estonian University of Life Sciences
- Dr. Susan Bryan, Su.Bryan@uhi.ac.uk, Dean of the Faculty of Science, Health and Engineering (Interim) at the University of the Highlands and Islands

The committee received data on the number of students, courses, teaching and Faculty members, and results from student and Faculty satisfaction surveys from the Office of Teaching and Learning at AUI. This information is presented and discussed in this report.

1.2 Faculty Characteristics

The Faculty of Environmental and Forest Sciences (FEFS) develops research and teaching in the fields of environmental sciences and forest sciences. FEFS was established in January 2020 as a unit within the university, as a result of the new strategic plan of AUI for 2019–2024. The activities of FEFS align broadly with the strategy of the university, in that the emphasis is placed on enhancing research, teaching, innovation and international collaboration. The main

activities within FEFS on environmental issues and land use contribute to distinguishing AUI from other universities in Iceland.

Previous evaluations at AUI had been conducted at the institution level: the institution-wide review for the Quality Enhancement Framework for Icelandic Higher Education (QEF1) in 2013, with an update in 2016, and the mid-term progress report conducted in 2020, as part of the second cycle of the Quality Enhancement Framework (QEF2). The QEF1 report concluded with the recommendations for improving AUI's management of standards and degrees and the quality of the student learning experience. The mid-term progress report identified advances that have been made in these issues at a university-wide level, including reviews of Study Programmes since 2016, and the establishment of a framework for monitoring graduate student performance and progress for example. However, it must be kept in mind that these evaluations were conducted at a University level or targeting a different structure (for example, AUI had two Faculties in 2013), so their results are not specific to FEFS, but they still provide a valuable reference point.

With regards to specific goals and the Action Plan (**Appendix 1**) outlined in the mid-term progress report of 2020 to which FEFS is actively contributing:

- obtain external funding through research collaboration and innovation projects: FEFS secured ISK 75 million in external funds in 2020 (11% of AUI's external funds)
- increase international collaboration: FEFS contributed ISK 31 million in external funds from international competitive funds in 2020 (81% of the total secured by AUI)
- recruitment of new academic staff: three new Faculty members (one academic position, two PhD students) were recruited in 2020
- attract more international students: a new joint MSc degree in Environmental Sciences for international students was established in 2020

1.2.1 Management Structure and Organisation of Teaching

FEFS is one of the three Faculties at AUI and operates across three campuses (Hvanneyri, Keldnaholt and Reykir). The administration of the Faculty is governed by the Faculty meetings, which are organised at least twice per year, in accordance with article 13 of regulation 366/2020. In addition, the Faculty has in place a decision-making mechanism approved at the Faculty meeting of December 2020 that allows decisions to be made *per capsulam*, without Faculty members having to be physically present. The daily administration of the Faculty is in the hands of the Head of the Faculty, as described in article 11 of regulation 366/2020. The Faculty has a Faculty Board (article 14 of regulation 366/2020), composed by the Head of Faculty, the Programme Coordinators and a student representative, that can make decisions between Faculty meetings. The Faculty Board has not been very active since the foundation of FEFS, especially since the *per capsulam* decision-making mechanism has been in place.

FEFS offers seven Study Programmes at the university level, two at the BSc level and five at the graduate level (**Table 1**), which are the focus of this report. In addition, the Faculty offers a vocational programme in Forest and Environment. The Faculty also has strong links to the continuing education programme at AUI and the GRÓ Land Restoration Training Programme.

Table 1. Overview of current Study Programmes within the Faculty

The section of the report where each Study Programme is reviewed in more detail is also indicated.

Name of Study Programme	Code	Cycle ¹	Degree	Credits (ECTS)	Section
BSc in Forest Sciences	600042	1.2	BSc	180	2.1
BSc in Natural and Environmental Sciences	600041	1.2	BSc	180	2.2
Nordic MSc in Environmental Changes at Higher Latitudes (EnCHiL)	600049	2.2	MSc	120	2.3
MSc in Restoration Science	600017	2.2	MSc	120	2.4
MSc in Natural and Environmental Sciences	600021	2.2	MSc	120	2.4
MSc in Forest Sciences	600027	2.2	MSc	120	2.4
PhD in Natural and Environmental Sciences	600026	3	PhD	180	2.5

¹See National Qualification Framework for Higher Education No. 530/2011.

1.2.2 Human Resources

The Faculty currently has 19 Faculty members (**Table 2**). Among these, 10 are academic teaching positions (3 Professors, 3 Associate Professors, 4 Assistant Professors). Eight Faculty members are female, but only 3 out of 10 academic positions (33%) are held by women. The Faculty also includes one adjunct lecturer, two PhD students, three research specialists and three Faculty members in other positions. All Faculty members, except 2 research specialists, hold 100% positions. Faculty members are unevenly distributed across the three AUI campuses: 3 Faculty members are in Hvanneyri, 5 in Reykir, and 11 in Keldnaholt.

Table 2. Faculty members: number and full-time–equivalent (FTE), as of Dec 31, 2020.

	Male		Female		Total	
	No.	FTE	No.	FTE	No.	FTE
Professors	2	2.00	1	1.00	3	3.00
Associate Professors	2	2.00	1	1.00	3	3.00
Assistant Professors	3	3.00	1	1.00	4	4.00
Adjunct Lecturers	--	--	1	1.00	1	1.00
Research specialists	1	0.50	2	1.90	3	2.40
PhD students	--	--	2	2.00	2	2.00
Other positions	3	3.00	--	--	3	3.00
Total	11	10.50	8	7.9	19	18.40

The age distribution of Faculty members ranges between 25 and 66 and is on average 51.8 years old (**Table 3**). Seven Faculty members are nearing the age of retirement (> 59 years old).

Table 3. Age of Faculty members as of 31 December 2020

Total	<30	30–39	40–49	50–59	>59	Total	
	No.	No.	No.	No.	No.	No.	%
Professors				1	2	3	15.8
Associate Professors		1			2	3	15.8
Assistant Professors			1	1	2	4	21.1
Adjunct Lecturers			1			1	5.3
Research specialists		1	1	1		3	15.8
PhD students	1	1				2	10.5
Other positions				2	1	3	15.8
Total	1	3	3	5	7	19	100
%	5.3%	15.8%	15.8%	26.3%	36.8%	100	

Most Faculty members have less than five years of employment within the Agricultural University, followed by those with 16–24 years of experience (**Table 4**). There is thus a good balance between Faculty members with longer and shorter experience.

Table 4. Period of employment of Faculty members (years) as of 31 December 2020

Total	<5	5–15	16–24	25–39	>40	Total	
	No.	No.	No.	No.	No.	No.	
Professors			2	1		3	
Associate Professors	1		2			3	
Assistant Professors	1		3			4	
Adjunct Lecturers		1				1	
Research specialists	3					3	
PhD students	2					2	
Other positions	1	2				3	
Total	8	3	7	1	0	19	
%	42.1%	15.8%	36.8%	5.3%	0	100%	

Eight Faculty members (two of them in academic positions) have been recruited in the last five years (**Table 4**). However, FEFS does not have a recruitment policy in place. It is of utmost importance that a plan is developed for recruitment needs for the next five years, based on likely retirements and the strategic priorities of the Faculty. This recruitment plan should also keep in mind the gender balance among academic positions at the Faculty, by prioritising the recruitment of female candidates for otherwise equally qualified candidates.

With regards to the research output, as assessed by the Evaluation System for Public Universities in Iceland for the period 2016–2019, FEFS contributes on average over 60% of the mean research points of the whole university, and nearly 70% of the research points from peer-reviewed publications (**Table 5**; NB. these numbers are totals and do not take into

account the different sizes of the Faculties). The productivity naturally varies between years but has remained high throughout the period.

Table 5. Research output of Faculty members, based on the Evaluation System for the Public Universities in Iceland, expressed by total number of research points (A) and research points from peer-reviewed publications (B)

	2016		2017		2018		2019		Mean	
	A	B	A	B	A	B	A	B	A	B
Faculty	417.71	322.23	395.02	259.73	293.24	186.71	358.55	252.29	366.13	255.24
University	625.62	410.2	695.12	435.88	517.61	274.08	579.31	387.92	604.415	377.02

Three surveys of employee satisfaction have been conducted by HR Monitor since November 2020 until the time of writing this report. The surveys are short polls conducted for each Faculty separately to assess different aspects of employee satisfaction. Within FEFS the highest scores have been for the category “job satisfaction”, but the Faculty scores consistently low in “clear vision”. In an open question on what is good and what could be improved about AUI, Faculty members pointed out the flexibility and good collegial atmosphere as positive aspects. The aspects that could be improved included communication and clarity in the decision-making process from AUI’s Executive Board, the need to take into account the opinion of staff members and to encourage teamwork. Measures to address these concerns have already been implemented, through the organisation of monthly staff meetings, weekly information emails from the Head of Faculty and the Rector, and training for staff and members of the Executive Board.

1.2.3 Finance

Financial figures for the Faculty for the year 2020 are presented in **Table 6**. While the salary costs of the Faculty represent nearly one fourth of the total salary costs of the university, the operating costs are only 10%. In 2020 the Faculty secured 81% of the research funds that AUI received from international competitive funds (European-funded research projects and Nordic programmes), and 25% of the total received from national competitive funds (Rannís and Orkurannsóknasjóður Landsvirkjunar). For “other income”, which represents the largest amount of AUI revenue, only 3% is secured by the Faculty. As pointed out by the external experts, more detailed information should be provided on how the revenues and expenses are balanced, and indications as whether the existing budget is sufficient or what would be the necessary actions to secure funding to achieve the Faculty objectives. Together with the strategic plan, the Faculty should develop a financial plan, in coordination with the Division of Finance and Operations at AUI.

Table 6. Key financial numbers for 2020 at AUI and FEFS

Budget 2020	ISK million			1000 € (1€ = 153.5 ISK)	
	AUI	Faculty	%Faculty	AUI	Faculty
Revenues					
Research funds					
National	109	27	25.0	708	177
International	38	31	81.3	248	201
Other income	555	17	3.0	3617	108
Total revenues	702	75	10.6	4573	485
Expenses					
Salaries	957	226	23.6	6237	1471
Operating costs	930	27	10.6	6059	176
Total expenses	1186	178	15.0	7724	1161

1.2.4 Students and Study Programmes

As of December 2020, the number of students in the two BSc programmes within the Faculty was 80 (4-year mean 65; **Table 7**). The number of students in the MSc and PhD programmes was 33 and 8 (2 of them as Faculty members; see above). Annual surveys of student satisfaction are conducted at the university for second year undergraduate students, graduate students and former students, but responses to the surveys are usually aggregated to the university level because there are not enough respondents within each Study Programme.

Table 7. Total number of students, number of entrants, retention rate for first year, and completion rate (4-year mean, 2017–2020) in BSc programmes.

Study Programme	No. of students			No. of entrants ³	Retention rate	No. of graduates	Completion rate ⁴
	Total no.	Full time ¹	Part time ²				
BSc in Forest Sciences	26	12	14	13	91%	2	15%
BSc in Natural and Environmental Sciences	39	22	17	25	88%	5	18%

¹ > 22.5 ECTS completed; ² 1–22 ECTS completed; ³ Number of students completing at least one examination in first term; ⁴ 4-year rate.

1.2.5 Actions

	Action	Deliverable	Deadline	Responsible party
Ch. 1.2	Faculty Characteristics			
1	Develop a recruitment policy for the Faculty.	Five-year plan (2022–2027) for recruitments based on likely retirements approved at Faculty meeting.	May 2022.	Head of Faculty

2	Ensure gender balance among academic positions.	More balanced gender ratio in academic positions following implementation of 5-year recruitment plan (2022–2027).	May 2027.	Head of Faculty, Selection Committees
3	Improve overall employee satisfaction.	Positive survey results monitored at least once per year and discussed at Faculty meetings; define milestones and goals at Faculty meeting.	December 2021.	Head of Faculty, all Faculty members
4	Develop a financial plan for the Faculty.	Define necessary actions to secure funding to achieve Faculty objectives.	May 2027.	Head of Faculty, Division of Finances and Operations

1.3 Academic Vision

1.3.1 Strategy for Teaching and Research

FEFS develops research and teaching in the fields of environmental and forest sciences. Given the recent establishment of the Faculty, FEFS has not yet developed its own strategy and vision, but rather operates in broad alignment with the strategy of AUJ, that places emphasis on enhancing research, teaching, innovation and international collaboration. Research at FEFS aims at understanding the effects and feedbacks of climate change and human land use on terrestrial ecosystem composition and functioning; in particular, as it pertains to ecosystem carbon dynamics and ecological interactions. FEFS is also at the forefront in the fields of ecosystem restoration, including large-scale restoration of severely degraded areas, soil science and atmospheric sciences. The main areas of research at FEFS (**Figure 1**) include ecological restoration, ecosystem ecology, land use change, wetland ecology, soil science and atmospheric sciences.

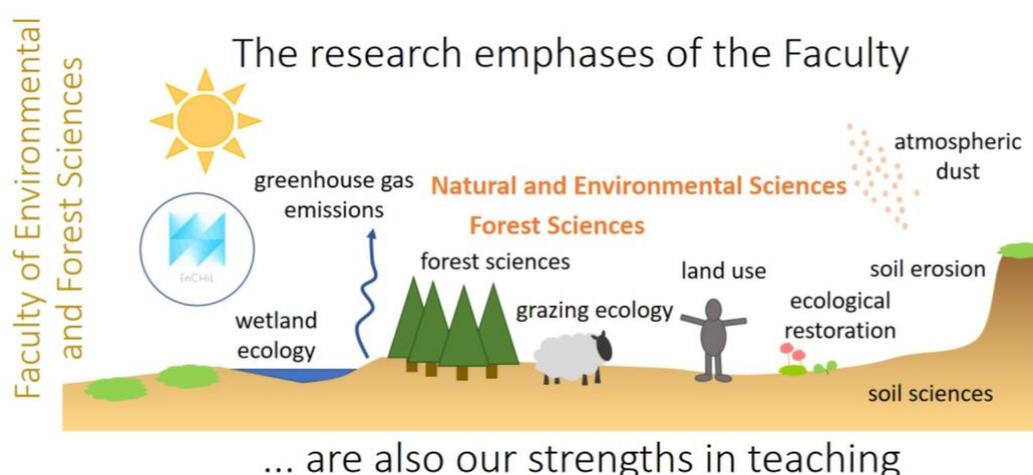


Figure 1. Research and teaching within the Faculty of Environmental and Forest Sciences

A priority for the Faculty is to develop its own strategic plan and vision for teaching and research (see section 1.3.4 below). The development of such a strategy will also prioritise the definition of clear, achievable objectives and deliverables that facilitate monitoring of the strategy, following the SMART principles.

1.3.2 Research Impact of the Faculty

Research activities within the Faculty have a large impact in the research community and society at large. For example, Faculty members are active in publishing scientific articles in international peer-reviewed journals. The average number of ISI articles published in 2020 by academic positions within the Faculty is 2.9 (29 articles total), which greatly exceeds the goal of 1 scientific article per academic Faculty member set out in the AUI strategy. Faculty members apply for grants from competitive national and international funds, and a total of 58 million ISK were secured from national and international grants in 2020. Currently eight PhD students are being trained at FEFS and conduct research at the Faculty. Finally, FEFS maintains active national and international research collaborations. With regards to larger societal impacts, FEFS participates actively in society and the environmental sector in Iceland. Faculty members regularly publish their research outputs in non-academic journals and public media and present their results in meetings of professional societies. FEFS participates in public debate and supports positive discussion of land use and environmental issues.

1.3.3 Collaboration and International Context

FEFS actively collaborates with individuals, other Faculties, universities and other institutions. These collaborations take place at an institutional level, through collaboration agreements for teaching or research, or at an individual level, where Faculty members are actively involved in different projects. FEFS also promotes international research cooperation by hosting two collaborative research networks: the Icelandic Aerosol and Dust Association (IceDust), a platform that links research on aerosol with focus on high latitude dust and climate, and the Herbivory Network, an international research network that investigates the role of herbivores in arctic and alpine ecosystems. Researchers at FEFS also contribute to other international initiatives, such as the expert groups of the Circumpolar Biodiversity Monitoring Programme (CBMP) and participate in steering and specialist committees at the Ministries and national professional societies. FEFS is also very well positioned at a national level, for example as shown in the recent report [Mapping Arctic Research in Iceland](#), where AUI follows University of Iceland in the amount of grants secured in Arctic research.

1.3.4 Actions

	Action	Deliverable	Deadline	Responsible party
Ch. 1.3	Academic Vision			
1	Develop a strategic plan and vision for teaching and research at the Faculty.	Strategic plan for the Faculty to be discussed at next Faculty meetings.	December 2022.	Head of Faculty, all Faculty members.
2	Measure societal impact of research.	Discuss and define measurements to track societal impact of research.	December 2022.	Head of Faculty, all Faculty members.

1.4 Student Support

1.4.1 Student Orientation

Orientation for new students in the BSc programmes and the Nordic MSc programme is organised centrally by the Office of Teaching and Learning at AUI in the Orientation Days at

the beginning of each academic year, where students meet each other and the Programme Coordinators and are introduced to the university and the services provided. There are several Student Associations, such as Dafnar for students in Forest Sciences (see section 2.1.1) or the Student Association at AUI, that organise activities to welcome new students. Orientation of MSc and PhD students in the individual-based programmes is in the hands of the supervisors, who guide the student through the initial stages. The Graduate Student Seminars are organised once per semester and serve an orientational purpose, as students get to meet each other and receive practical information, such as presentations by the student counsellor.

One point that has been mentioned by some students is that there could be more emphasis placed on encouraging students to pursue further studies at the graduate level. Still, the numbers of students who graduated from AUI that continue their studies was around 40% in 2020 (out of 34 MSc students continuing their studies at AUI, 12 were from the BSc in Natural and Environmental Sciences, 6 from the BSc in Forest Sciences). A way to encourage further specialisation could be to showcase the diversity in job opportunities that the BSc programmes can offer, by organising sessions with former students who are now scientists and professionals to share with students how their education has been useful to them in their work. As well, it was suggested during the review process of this report that a more longitudinal approach to student induction should be considered to avoid overloading new students with information in a one-day programme at the beginning of their studies. As well, there are available student handbooks for the Study Programmes developed by the Office of Teaching and Learning as a more permanent source of information.

1.4.2 Rights and Obligations

Rights and obligations of the students are introduced during the Orientation Days and the Graduate Students Seminars. This information is also available on the website of the university (under “Rules and Regulations”). One student representative from BSc programmes at FEFS is invited to attend the Faculty meetings, where they can express their views but do not have voting rights (article 13 in the regulation 366/2020). Participation of students in Faculty meetings has been however scarce.

Students at AUI are treated according to the Equal Rights policy, aimed at reducing potential inequalities and ensuring equal rights. The Equal Rights policy at AUI is based on Act No. 10/2008 *on the Equal Rights of Women and Men* and Act No. 59/1992 *on the Affairs of Disabled People*. AUI places emphasis on persons being treated with respect. AUI’s administration has the responsibility to enforce the individual provisions of the equal rights policy. Representatives of students are appointed to the Equal Rights Committee.

1.4.3 Support Services

Undergraduate students receive information on the organisation of their Study Programme, including courses, timetables and dates for examinations from the Programme Coordinators and through the university website. Course instructors provide detailed information about specific courses (e.g. course contents and evaluation) at the beginning of each course.

Students are provided with IT services, including an email account and access to the intranet, UGLA, and the teaching platform Canvas, connection to wireless network within AUI and

through EDUROAM (Education Roaming), and licenses to software. Library services are available in all three campuses and online access to electronic books and scientific journals is also available. Students are generally satisfied with the library services, that have copies of the textbooks used in class and other books that cannot be easily found at other libraries in Iceland. At the library, it is possible to ask for advice about access to information and references related to teaching, research and coursework. As well, in campus there are classrooms and reading rooms that the students can use for studying and group projects. These spaces are frequently used, and students appreciate having access to these facilities. Student counselling services are also available to support students in their academic or personal matters while they are studying at the university. The Faculty monitors student satisfaction through quality surveys and comments received in course evaluations. Further monitoring of student satisfaction specific to the Faculty would be valuable to further improve student services in the future. As well, the effectiveness of student support, libraries, counselling and career service should be reviewed separately at the university level.

1.4.4 Actions

	Action	Deliverable	Deadline	Responsible party
Ch. 1.4	Student Support			
1	Increase encouragement for BSc students to pursue graduate studies.	Increase retention rates from BSc programmes to MSc and PhD studies.	August 2022.	Programme Coordinators, course instructors.
2	Increase awareness of job opportunities after graduation.	Organise sessions with former students who are now working in different fields as part of the Orientation Days.	August 2021.	Programme Coordinators, Office of Teaching and Learning.
3	Increase student participation in Faculty meetings.	One student representative from one of the BSc programmes attends the Faculty meetings.	December 2022.	Head of Faculty.
4	Increase monitoring of student satisfaction.	Send out at the end of the academic year a survey on student service satisfaction.	June 2022.	Head of Faculty, Head of Teaching and Learning.
5	Review of effectiveness of support services for students.	Evaluate the effectiveness of student support, libraries, counselling and career service at the university level.	June 2023.	Office of Teaching and Learning.

2 Study Programmes

The seven Study Programmes offered by the Faculty (as outlined in **Table 1**) are discussed in detail in the following sections. The three individual-based MSc degree programmes are discussed together in one section (section 2.4) because they are similar in terms of structure, management and quality review.

A. Study programmes at the BSc level

The BSc programmes are 180 ECTS. To be admitted into the BSc programmes students need to have completed secondary education, with an Icelandic matriculation examination. Courses are often between 4 and 6 ECTS (range 2–8 ECTS) and are offered in four short semesters per year (7 weeks each). The official language of instruction at the undergraduate level is Icelandic, although some optional courses are taught in English. The students finish their BSc programme with a 10-ECTS project presented as a written thesis and in an oral examination. These projects are evaluated by a joint board that ensures internal standards of student achievement. All theses are made available in an open repository (skemman.is).

2.1 BSc in Forest Sciences (600042 BSc 180 ECTS)

2.1.1 Students

Intake rates for the BSc in Forest Sciences over the last years have remained high (85% on average; **Table 8**). The average class size in the first year is 13 students and retention rates after the first year are 91% on average. On average there are 26 students in the programme at a given year. Completion rates are relatively low (15%) but have been steadily increasing since 2017. Low completion rates are probably related to the fact that nearly half of the students take studies as part time, perhaps not intending to complete the whole programme.

Table 8. BSc in Forest Sciences (600042). Intake rate (%)¹, no. of students completing first term², retention rate (second year; %)³, number of students graduating, completion rate⁴, total number of registered students 20 October (all study years), of which full time (>22.5 ECTS completed) and part time (1–22 ECTS completed), sex ratio and age for years 2017–2020

	Intake rate (%)	No. students finishing first term	Retention rate (%)	No. students graduating	Completion rate (%)	Total no. of students	% Male	Full time	Part time	Mean age	Age range
2020	75%	22	--	1	25%	34	59%	10	17	38.4	21–68
2019	90%	15	100%	1	20%	29	45%	15	14	35.8	20–54
2018	75%	10	90%	4	14.29%	17	59%	8	9	39.2	21–53
2017	100%	6	83.3%	1	0%	23	52%	15	8	35	20–56
Mean	85%	13	91%	2	15%	26	54%	14	12	37	

¹ Proportion of applications resulting in a new record (accepted applications and registration fees paid).

² No. of students completing at least one examination in the first-year autumn term.

³ Proportion of students returning in the second-year autumn term, completing at least one examination.

⁴ 4-year completion rate.

Graduates from the BSc programme in Forest Sciences are eligible to apply for membership of the professional society of foresters in Iceland. The last survey of student fates after BSc degree for students graduated between 2007–2015 indicated that nearly half (48%) continued their studies to MSc and 52% students started employment. After completion of BSc and MSc studies, 82% of students secured a position where they used the skills learned in their studies.

So far, no formal study committee has been appointed for the BSc programme in Forest Sciences, but instead the Programme Coordinator has organised 1–2 programme meetings per year, where potential changes in the Study Programme are discussed with students and teachers. These more informal meetings and discussions have been effective, but the establishment of a formal study committee to monitor the programme could be useful. Teaching and course evaluations are taken online at the end of each course. Student participation in these surveys is relatively low (on average for courses in the BSc programmes at AUI is around 40%). The results of these teaching and course evaluations show that the attitude of students towards the courses offered in the BSc in Forest Sciences is very positive, especially with respect to the quality of teaching and the organisation of courses. However, in general for the BSc programmes at AUI, more visibility is needed on the mechanisms in place about the actions that are identified from student feedback, who takes forward the actions arising from student feedback and monitors them, and how are the students made aware of the actions that have been taken in response to feedback.

Students in Forest Sciences at AUI have their own student association, named Dafnar, which is also open to other students and staff interested in forestry and related issues. Dafnar organises various extracurricular activities for the students, including invited seminars, excursions and visits to forestry-related stakeholders, entrepreneur activities (planting or thinning) for increased practical experience of students and fund-raising for other activities.

2.1.1.1 Actions

	Action	Deliverable	Deadline	Responsible party
Ch 2.1.1	Students			
1	Increase student participation in course evaluations.	Reach at least 60% participation of students in course evaluation across courses.	December 2021.	Programme Coordinator, Office of Teaching and Learning, course instructors.
2	Ensure that results of course evaluations are taken into account and action is taken.	Formal review of results.	December 2021.	Programme Coordinator, Office of Teaching and Learning, course instructors.

2.1.2 Teaching and Learning

The BSc programme in Forest Sciences is a 180-ECTS programme, where 156 ECTS are mandatory courses and 14 ECTS are optional courses (**Figure 2**). The aim of the BSc programme in Forest Sciences is to address natural resource management with emphasis on two important environmental goals in Iceland: 1) establishment and management of forests,

and 2) restoration and management of degraded lands. The programme includes fundamental scientific education but takes students beyond the boundaries of traditional disciplines. Connections between land use, natural, technical, planning and economic sciences are emphasised, and elements such as landscape planning and geographical information systems (GIS) are included in the program. This combination is not offered at other universities in Iceland.

The learning objectives of the BSc in Forest Sciences were originally defined when the programme started in 2006 and further elaborated when the programme passed the National Qualification Framework in 2007. The programme has explicit learning outcomes and well-defined goals regarding: a) knowledge and understanding, b) type of knowledge, c) practical skills, d) theoretical skills, e) communication skills and information literacy, and f) learning skills. However, the learning outcomes of the programme have not been discussed or updated recently. There are also explicit learning outcomes for all programme courses, which are regularly updated by the course instructor in collaboration with the Programme Coordinator.

600042 Forest Sciences, B.Sc (Courses in 2021-2022)

First year	
Fall	Spring
<ul style="list-style-type: none"> ④ 03.11.02 Introduction to academic methodology 🇫🇮 🇩🇰 4e ④ 01.49.03 Forest science I - Introduction to forest science and forestry 🇫🇮 🇩🇰 🇮🇸 6e ④ 01.62.02 Cryptogamic botany 🇫🇮 🇩🇰 🇮🇸 4e ④ 01.20.03 General Chemistry - theoretical 🇫🇮 🇩🇰 🇮🇸 5e ④ 01.21.01 General Chemistry - practical 🇫🇮 🇩🇰 1e ④ 01.42.03 An Introduction to Business Finance 🇫🇮 🇩🇰 🇮🇸 6e ④ 02.33.02 Basic Practical Statistics 🇫🇮 🇩🇰 4e 	<ul style="list-style-type: none"> ④ 02.24.03 Geographical Information Systems I (Cartography) 🇫🇮 🇩🇰 🇮🇸 6e ④ 02.02.02 Botany 🇫🇮 🇩🇰 🇮🇸 4e ④ 02.06.04 Basic Ecology 🇫🇮 🇩🇰 🇮🇸 8e ④ 04.73.03 Geographical Information Systems II - GIS 🇫🇮 🇩🇰 🇮🇸 6e ④ 06.51.03 Entrepreneurship 🇫🇮 🇮🇸 🇩🇰 6e 1) ④ 02.12.01 Field Botany - Summer Course 🇫🇮 🇩🇰 🇮🇸 2e
1) Taught in June	
Elective courses are only for students who have completed compulsory courses in the 1st year.	

Second year	
Fall	Spring
1) 03.73.02 Forest health 4e 1) 05.84.03 Forest and wood technology 6e 03.53.03 Ecological Restoration and Sustainable Land Management 6e 01.60.03 General geology 6e	02.26.02 Organic Chemistry 4e 04.33.03 Plant Physiology 6e 1) 05.66.02 Forest mensuration 4e 2) 03.50.02 Forest Science II - Silviculture 6e 04.49.03 Techniques for restoration and afforestation of severely degraded land 6e 3) 04.70.01 Icelandic Forests - Field Course 2e 02.29.03 Biochemistry 6e
1) Taught every other year, next in 2021/2023.	
2) Taught every other year, next in the spring 2021/2023.	
3) Next in summer 2021.	
Third year	
Fall	Spring
03.26.03 Genetics 6e 06.61.03 Plant use in urban forests, recreational forests and shelterbelts 6e 1) 04.71.03 Planning in Forestry Optional 6e 03.63.03 Soil Science 6e 05.34.02 Resource and Environmental Economics 4e	04.67.03 Landscape Analysis (Part of Environmental Planning IV) 6e 06.10.05 B.Sc. Final Assignment - Thesis 10e
1) Taught every other year, next in fall 2021/2023.	
Year of study unspecified	
Fall	Spring
1) 07.85.03 Ecosystem Ecology and Sustainable Management 6e 05.69.03 Pollution and Waste Management 6e 01.24.02 Environmental Ethics 4e 05.33.02 Organic Agriculture 4e 03.52.01 ARCHITECTURE AND NATURE - The positive impact of design on nature 2e 05.72.02 Nature Conservation 4e 05.82.03 Nature Interpretation / Practical approach for tourist guides 6e 05.76.03 Grazing ecology and management 6e 06.90.02 Geographical Information Systems III (Environmental modelling with GIS) 4e 03.39.04 Statistics & Experimental Design 8e 03.46.04 Icelandic Ecosystems 8e	2) 04.50.02 Plant Ecology 4e 06.40.02 Sustainable Development 4e 03.47.02 Geology of Iceland 4e 3) 04.52.02 Introduction to ecological hydrology 4e 4) 05.79.03 Restoration ecology 6e 05.85.02 Communication in environmental and natural resource issues 4e
1) Taught next in 2021/2023.	
2) Taught every other year, next in spring 2022	
3) Taught every other year, next in spring 2021/2023.	
4) Taught every other year, next in spring 2022/2024.	

Figure 2. Structure of the BSc programme in Forest Sciences

The general structure of the programme has remained largely unchanged since 2007. One main change is that initially the programme contained two main streams for specialisation: Forest Science (FS) and Restoration Ecology and Management (REM). In 2016 the REM stream was discontinued, as the plan was to start a specific MSc programme with that focus. Since the learning outcomes were originally developed separately for each stream, this did not call for a revision of the programme's learning outcomes after this change. The organisation and timing of different courses has changed in recent years, which required adjusting their learning outcomes, so that the overall learning outcomes of the programme were reached.

Curricular mapping has not been done centrally but it has been addressed the programme meetings with students and teachers (at least one such meeting is organised per year). Redundancies and missing knowledge gaps have been addressed by changing learning outcomes in individual programme courses and setting up discussions with teachers across multiple courses. This work has mainly been coordinated by the Programme Coordinator and the Undergraduate Studies Committee at AUI. Course instructors estimate the workload at the beginning of each course. AUI has a form to evaluate the credits and student work, a tool that could be used more regularly. In the course evaluations students are asked to evaluate course workload compared to other courses in the programme. If a course workload ranks unusually high or low, the Programme Coordinator ensures that the issue is corrected.

Many courses have mandatory practical sessions where the students get hands-on training on different topics, and some of the courses are now implementing a flipped classroom method, where the students receive reading materials they have to prepare in advance to the classes and are then used for active discussions. Using diverse teaching methods suits a diverse group of students and offers students a variety of ways to learn. The choice of teaching method is mainly up to the instructor, depending on what suits best for teaching a specific topic.

The Undergraduate Studies Committee encourages the use of various methods of assessment and ensures that consistent methods and standards are used across AUI. Most courses within the Forest Sciences programme use individual and/or group assignments as part of the course assessment and final exams are usually not more than 40–60% of the final grade. Many courses also use continuous assessment with weekly online exams or quizzes. The methods of assessment and their weight in the final grade are always explained in the course description made available to the students at the latest on the first day of class.

AUI has invested in specialised equipment for teaching in Forest Sciences and related fields, used both by the Forest Sciences BSc programme and for non-university programmes: the Forest Technology vocational programme and for continuous education. Furthermore, the Forest Science programme has collaborated with the Forest Service of Iceland and the Soil Conservation Service of Iceland to get free access to specialised equipment and to forest and revegetation sites for various educational activities. Continued good relationship with the Forest Service and the Soil Conservation Service are therefore of outmost importance for the programme. Bilateral agreements were made with both authorities and some staff members hold adjunct positions (guest professors) at AUI. These agreements need to be revisited to ensure they are up to date.

2.1.2.1 *Actions*

	Action	Deliverable	Deadline	Responsible party
Ch. 2.1.2	Teaching and Learning			
1	Revisit learning outcomes of the whole programme.	Learning outcomes for the programme.	August 2021.	Programme Coordinator, Undergraduate Studies Committee.
2	Ensure access to specialised teaching equipment.	Agreements that ensure access to specialised teaching equipment.	August 2021.	Rector, Head of Faculty, Programme Coordinator.

3	Ensure good collaboration between AUI, the Forest Service and the Soil Conservation Service.	Bilateral agreements and adjunct positions renewed.	August 2021.	Rector, Head of Faculty, Programme Coordinator.
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2.1.3 Coordination between Teaching and Research

The BSc programme in Forest Sciences aims to graduate students with solid knowledge, understanding and skills in the field of forest sciences, as well as in relevant fields of land use, nature, planning, management and economics. To ensure that the BSc students are exposed to recent developments in their field of study, course instructors are active experts in the relevant fields, including staff members at AUI and experts from other institutions, academic or not, from Iceland or abroad. This ensures that the teaching is indeed based on the current knowledge in Forest Sciences and other subject fields.

Students also have the possibility to take up to 6 ECTS for individual studies and practical training, where they work in their field in companies, municipalities or institutes for several weeks, mostly in the summertime. The development of a 10-ECTS final project also provides the student with first-hand experience in conducting a research project in close collaboration with their supervisors. Some of the students do their final research projects within larger research projects of Faculty members and therefore directly support the research strategy of the Faculty. The Icelandic Forest Research at Mógilsá, the research branch of the Iceland Forest Service, is also a key collaborator in terms of offering students research projects that introduces them to the current knowledge in the subject field of Forest Sciences. Each student gets support from usually two supervisors during their final project.

2.1.3.1 Actions

	Action	Deliverable	Deadline	Responsible party
Ch. 2.1.3	Coordination Between Teaching and Research			
1	Continue annual introduction meetings between the Programme Coordinator and Icelandic Forest Research, where possibilities for new final projects are reviewed for upcoming students.	Flow of information and project ideas from the Forest Service to students.	August 2021.	Programme Coordinator, Forest Service.
2	Continue bi-annual field course with all 1 st - and 2 nd -year students where key stakeholders in the forestry sector are visited.	Flow of information and project ideas from the forestry sector directly to the students.	August 2023.	Programme Coordinator, course instructor.
3	Continue one course (2–4 ECTS) annually where foreign guest teachers introduce a new subject.	Flow of new theory and knowledge.	August 2022.	Programme Coordinator, International Programme Coordinator, Office of Teaching and Learning.

2.1.4 Conclusions

The BSc in Forest Sciences programme focuses on a distinct subject field that is not taught at any other university in Iceland. The programme has been running without major organisational changes since 2006–2007 and has been experiencing steadily increasing student intakes in recent years. On average completion rates are low, but there has been a steady increase since 2017. It is foreseen that the programme will therefore continue more or less in its present form into the future.

2.2 BSc in Natural and Environmental Sciences (600041 BSc 180 ECTS)

2.2.1 Students

Intake rates for the BSc in Natural and Environmental Sciences have remained stable (around 80% on average; **Table 9**) over the last years. The number of students starting the programme has greatly increased, from 6 in 2017 to 48 in 2020. More female students are taking this programme (only 22% of students are male). Completion rates are relatively low (18%) but comparable to the other BSc programme, and have also been increasing since 2018. Half of the students are taking the programme as part-time students.

Table 9. BSc in Natural and Environmental Sciences (600041). Intake rate (%)¹, no. of students completing first term², retention rate (second year; %)³, number of students graduating, completion rate⁴, total number of registered students 20 October (all study years), of which full time (>22.5 ECTS completed) and part time (1–22 ECTS completed), sex ratio and age group for the years 2017–2020

	Intake rate (%)	No. students in first term	Retention rate (%)	No. students graduating	Completion rate (%)	Total no. of students	% Male	Full time	Part time	Mean age	Age range
2020	79%	48	--	5	15.4%	58	28%	32	26	34.7	20–67
2019	86%	35	91.4%	3	18.2%	45	20%	31	14	30.8	21–64
2018	70%	10	90%	4	11.8%	25	24%	11	14	34.4	21–53
2017	78%	6	83.3%	9	26.9%	25	16%	12	13	33.9	20–64
Mean	78%	25	88%	5	18%	38	22%	22	17	33	

¹ Proportion of applications resulting in a new record (accepted applications and registration fees paid).

² No. of students completing at least one examination in the first-year autumn term.

³ Proportion of students returning in the second-year autumn term, completing at least one examination.

⁴ 4-year completion rate.

The Study Programme has been traditionally offered as three separate study lines: *Natural history*, *Natural resources* and *National parks and protected areas*, but around 60% of the courses were common across the study lines. Students graduating with a specialisation in *National parks and protected areas* get certification as park ranger from the Environment Agency of Iceland. From autumn 2021 there will be only one study line (**Figure 3**), where students develop an inter-disciplinary understanding of fundamental concepts of natural

resources, their functions, processes and management. In this study line, the focus will be both on Icelandic nature and resources as well as global perspective, to enhance students' knowledge of a wide range of disciplinary perspectives and develop their ability to integrate scientific and management issues. Students that take specific courses within the study line can still get the certification as park ranger.

Graduates from the BSc programme in Natural and Environmental Sciences are employed in positions where they use the skills learnt during their studies, for example as park rangers, specialists in national parks, working on environmental issues in municipalities or in the Environment Agency of Iceland, teaching in all school levels, or consulting on environmental issues in companies, to mention a few.

Teaching and course evaluations are taken online at the end of each course, but Programme Coordinators do not regularly have access to all course evaluations within the programme, which prevents an overall assessment. Student participation in these surveys is low, and this is possibly related to the timing when these evaluations are available. To increase participation, it might be good to remind students to complete the course evaluations by email and in class. In general, the results of these teaching and course evaluations show that students are satisfied, and their attitude towards the courses offered in the BSc in Natural and Environmental Sciences is very positive, especially with respect to the quality of teaching and how instructors involve new research (their own and others) into the teaching. Students also appreciate the accessibility of the teachers.

2.2.1.1 Actions

	Action	Deliverable	Deadline	Responsible party
Ch 2.2.1	Students			
1	Increase student participation in course evaluations.	Reach at least 60% participation of students in course evaluation across courses.	December 2021	Programme Coordinator, Office of Teaching and Learning, course instructors.
2	Results of course evaluations are accessible to the Programme Coordinator.	Access of results to the Programme Coordinator.	December 2021.	Office of Teaching and Learning
3	Ensure that results of course evaluations are taken into account and action is taken.	Formal review of results.	December 2021.	Programme Coordinator, Office of Teaching and Learning, course instructors.
4	Increase student participation in annual surveys of student satisfaction on second year.	Reach at least 85% participation.	December 2022.	Programme Coordinator, Office of Teaching and Learning.

2.2.2 Teaching and Learning

The BSc programme in Natural and Environmental Sciences aims to give students basic understanding of nature and natural processes, on a broad, multi-disciplinary basis in biological, geological, and environmental sciences. Emphasis is placed on understanding

ecosystems, functions and components. After completing their studies, students should have a deep understanding of the fundamentals of living systems and their interactions with the physical environment and sustainable use of natural resources.

The BSc programme in Natural and Environmental Sciences is a 180-ECTS programme, where 158 ECTS are mandatory courses and 12 ECTS are optional courses (**Figure 3**). Up to 2020, the programme was divided into three study lines. Given the reduced number of students this structure was difficult to maintain, requiring a redesign of these study lines into a general curriculum in Natural and Environmental Sciences. This process has been developed by the Programme Coordinator in consultation with instructors, students and the Head of Faculty, following the rules of AUI, and will be offered for the first time in the academic year 2021–2022.

To ensure consistent workloads for each course, AUI has a form to evaluate the credits and student work in each course. Lecturers are encouraged to use this form to evaluate each course, but more widespread use of this form would ensure consistency between courses. Many courses have mandatory practical sessions where the students get hands-on training on different topics. Similar to the BSc in Forest Science programme, some of the courses are now implementing a flipped classroom method, where the students receive recorded lectures on the material in advance and the hours in the timetable are used for discussion and working on cases. In some cases, students also receive reading materials that they must prepare in advance to the classes. The choice of teaching method is mainly up to the instructor to decide, depending on what suits best for teaching a specific topic. As well, the lecturer of each course has the responsibility of the course assessment and decides how this is done: with different types of projects, evaluation through the course or exam (written, oral, home, other). Assessment of each course is introduced in beginning of each semester. When the grades have been delivered, students have the possibility to demand explanation of grades and ask for reassessment if needed. Finally, students have opportunities to take part of their study at another university, in Iceland or abroad, through exchange programmes.

600041 Natural and Environmental Sciences, B.Sc (Courses in 2021-2022)

First year	
Fall	Spring
Ⓢ 01.65.01 Introduction to Basic Ecology 🇩🇩 🇩🇩 🇩🇩 🏛️ 2e Ⓢ 01.10.02 Land Resources and Agricultural Development 🇩🇩 🇩🇩 🇩🇩 🌐 4e Ⓢ 01.62.02 Cryptogamic botany 🇩🇩 🇩🇩 🇩🇩 🌐 4e Ⓢ 03.11.02 Introduction to academic methodology 🇩🇩 🇩🇩 🌐 4e Ⓢ 01.20.03 General Chemistry - theoretical 🇩🇩 🇩🇩 🇩🇩 🌐 5e Ⓢ 01.21.01 General Chemistry - practical 🇩🇩 🇩🇩 🇩🇩 1e Ⓢ 01.60.03 General geology 🇩🇩 🇩🇩 🇩🇩 🌐 6e Ⓢ 02.33.02 Basic Practical Statistics 🇩🇩 🇩🇩 🌐 4e	Ⓢ 02.02.02 Botany 🇩🇩 🇩🇩 🇩🇩 🌐 4e Ⓢ 02.24.03 Geographical Information Systems I (Cartography) 🇩🇩 🇩🇩 🌐 6e Ⓢ 02.26.02 Organic Chemistry 🇩🇩 🇩🇩 🇩🇩 🌐 4e Ⓢ 02.06.04 Basic Ecology 🇩🇩 🇩🇩 🇩🇩 🌐 8e 1) Ⓢ 02.61.01 Field course: Geology and soil science 🇩🇩 🇩🇩 🏛️ 2e 2) Ⓢ 02.12.01 Field Botany - Summer Course 🇩🇩 🇩🇩 🇩🇩 🏛️ 2e Ⓢ 04.73.03 Geographical Information Systems II - GIS 🇩🇩 🇩🇩 🇩🇩 🌐 6e
1) Taught in end of May	
2) Taught in the end of June	
Elective courses are only for students who have completed compulsory courses in the 1st year.	

Second year	
Fall	Spring
Ⓢ 03.53.03 Ecological Restoration and Sustainable Land Management 🇩🇩 🇩🇩 🇩🇩 🌐 6e Ⓢ 01.24.02 Environmental Ethics 🇩🇩 🇩🇩 🇩🇩 🌐 4e 1) Ⓢ 02.64.02 Icelandic Bryophytes and Lichens 🇩🇩 🇩🇩 🌐 4e 2) Ⓢ 03.46.04 Icelandic Ecosystems 🇩🇩 🇩🇩 🇩🇩 🌐 8e Ⓢ 03.63.03 Soil Science 🇩🇩 🇩🇩 🇩🇩 🌐 6e	Ⓢ 04.33.03 Plant Physiology 🇩🇩 🇩🇩 🇩🇩 🌐 6e 3) Ⓢ 04.52.02 Introduction to ecological hydrology 🇩🇩 🇩🇩 🌐 4e Ⓢ 06.40.02 Sustainable Development 🇩🇩 🇩🇩 🌐 4e 4) Ⓢ 03.48.03 Natural resources in Iceland: Utilization and management 🇩🇩 🇩🇩 🇩🇩 🌐 6e Ⓢ 05.85.02 Communication in environmental and natural resource issues 🇩🇩 🇩🇩 🌐 4e Ⓢ 01.30.02 Microbiology 🇩🇩 🇩🇩 🇩🇩 🌐 4e 5) Ⓢ 04.26.03 General Zoology - Vertebrates 🇩🇩 🇩🇩 🇩🇩 🌐 6e
1) Taught every other year, next in 2022/2024.	
2) Taught every other year, next in fall 2022/2024.	
3) Taught every second year, next in spring 2023/2025.	
4) Will be 4 ECTS in spring 2023	
5) Taught every other year, next in 2023/2025.	

Third year	
Fall	Spring
1) 05.76.03 Grazing ecology and management 6e 1) 03.27.02 Invertebrate Zoology 4e 2) 05.82.03 Nature Interpretation / Practical approach for tourist guides 6e 3) 03.27.02 Invertebrate Zoology 4e 05.34.02 Resource and Environmental Economics 4e	06.38.03 Environmental Impact Assessment 6e 4) 04.50.02 Plant Ecology 4e 5) 03.47.02 Geology of Iceland 4e 06.10.05 B.Sc. Final Assignment - Thesis 10e
1) Taught every second year, next in fall 2021/2023/2025. 2) Taught every other year, next in fall 2022/2024. 3) Will be 6 ECTS fall 2023 4) Taught every other year, next in 2022/2024. 5) Taught every other year, next in spring 2022/2024.	
Year of study unspecified	
Fall	Spring
03.52.01 ARCHITECTURE AND NATURE - The positive impact of design on nature 2e 01.49.03 Forest science I - Introduction to forest science and forestry 6e 1) 05.69.03 Pollution and Waste Management 6e 03.39.04 Statistics & Experimental Design 8e 03.73.02 Forest health 4e 06.90.02 Geographical Information Systems III (Environmental modelling with GIS) 4e 05.33.02 Organic Agriculture 4e	2) 04.78.02 Traditional natural resource utilization in Iceland 4e 04.36.02 Meteorology 4e 06.51.03 Entrepreneurship 6e 04.62.02 Planning 4e 06.64.03 Protected areas management plans 6e 3) 05.79.03 Restoration ecology 6e
1) Taught every second year, next in 2021/2023. 2) Taught every other year, next in spring 2021/2023. 3) Taught every second year, next in 2022/2024.	

Figure 3. Structure of the BSc programme in Natural and Environmental Sciences

2.2.2.1 Actions

	Action	Deliverable	Deadline	Responsible party
Ch. 2.2.2	Teaching and Learning			
1	Assessment of the new programme structure with a single study line (e.g. student satisfaction).	Evaluation of the performance of the new programme structure.	August 2022.	Programme Coordinator.
2	Continue developing the learning outcomes of the new programme structure.	Learning outcomes of the new programme structure.	December 2021.	Programme Coordinator, instructors, student representative, Office of Teaching and Learning.
3	Systematic evaluation of credits and student work in each course.	Consistency of workload between courses.	August 2022.	Programme Coordinator, instructors, Office of Teaching and Learning.
4	Systematically check learning outcomes in each course and connection to the learning outcome of the programme.	Consistency and quality of the programme.	August 2022.	Programme Coordinator, instructors.

2.2.3 Coordination between Teaching and Research

To ensure that the BSc students are exposed to recent developments in their field of study, course instructors are selected among experts in the field either at AUI or from other academic institutions in Iceland or abroad. Students also have the possibility to take individual studies and practical training, where they work in companies, municipalities or institutes relevant to their field for several weeks, mostly in the summer. Students can have up to 2 ECTS for this work. The development of a 10-ECTS final project also provides the student with first-hand experience in conducting a small research project in close collaboration with their supervisors.

2.2.3.1 Actions

	Action	Deliverable	Deadline	Responsible party
Ch. 2.2.3	Coordination between Teaching and Research			
1	Short workshops with foreign lecturers in environmental fields through exchange programme.	Flow of knowledge from abroad to students.	December 2022.	Programme Coordinator, International Coordinator.

2.2.4 Conclusions

The recent changes in the structure of the programme from three to a single study line will make planning of teaching and management easier and more precise and ensure that relevant courses are taught every year. This will also enhance the quality of the study for the students, courses will be taught by schedule and with more students, so it is likely the quality of each course will increase. Similar to the other BSc programme, completion rates are relatively but have been increasing since 2018.

B. Study programmes at the MSc and PhD level

Graduate (MSc) and post-graduate (PhD) studies are managed jointly across all three Faculties of AUI, by the Graduate Studies Committee. The committee is chaired by the Graduate Studies Coordinator, who is elected at a general university meeting for a period of three years. The committee includes one representative from each Faculty, MSc Programme Coordinators, the Head of Teaching and Learning and two student representatives, one for MSc students and one for PhD students. As of 2021 one 25% administrative position has also been allocated to assist with the management of the graduate Study Programmes.

The MSc programmes are either organised programmes led by MSc Programme Coordinators, or as individual, research-based MSc programmes, which are led by the Graduate Studies Coordinator. At present, FEFS offers one organised MSc programme and three individual, research-based MSc programmes. FEFS also offers PhD degrees in the fields of study offered as undergraduate or MSc programmes, managed by the Graduate Studies Committee. The

PhD programmes of AUI, similar to the Doctoral School of the University of Akureyri, belong to the Graduate School of University of Iceland.

2.3 Nordic MSc in Environmental Changes at Higher Latitudes (600049 MSc 120 ECTS)

2.3.1 Students

The Nordic Master Programme in Environmental Changes at Higher Latitudes (EnCHiL) was launched in the fall 2020. This programme is part of a joint Nordic Master programme endorsed by the Nordic Council of Ministers. EnCHiL has been developed in close collaboration between three main partner universities: AUI, the University of Helsinki and Lund University, together with several other affiliated partners. EnCHiL students receive a MSc diploma from two of the degree-awarding partners but can take courses or develop their thesis work at any of the associated partners.

In the first round of applications in winter 2019 the programme received 12 applications, from which five students were able to start the programme in the fall 2020. The mean age of students is 29.8 years (range 22–47), and 80% of the students in this first intake were females. Three of the students are Icelandic and two are international (Spain, Sweden). The EnCHiL Nordic MSc has three entry points, at each of the partner universities. In the fall 2020 four students started their programme at AUI and one at the University of Helsinki. During the second semester of their Study Programme, all EnCHiL students have a mandatory mobility period to AUI.

Two student representatives take part in the EnCHiL Board meetings that are held at least once a year. The EnCHiL Board also includes representatives from each of the EnCHiL partners, the local academic coordinators from the degree-awarding parties. As part of the regular evaluation methods at each of the partner universities, teaching and course evaluations are taken online at the end of each course at each of the partner universities. Further, programme-specific quality assurance instruments for EnCHiL will include: 1) annual programme reviews with input from students and graduate surveys, 2) a more comprehensive review after graduation of the second intake (in spring 2023), 3) an evaluation after graduation after additional three intakes, as long as the programme continues.

2.3.1.1 Actions

	Action	Deliverable	Deadline	Responsible party
Ch 2.3.1	Students			
1	Increase student enrolment in the second run of the programme.	At least 10 students start the EnCHiL programme in the fall 2021.	August 2021.	Programme Coordinator.
2	Increase student enrolment in the third run of the programme.	At least 15 students start the EnCHiL programme in the fall 2022.	August 2022.	Programme Coordinator.

2.3.2 Teaching and Learning

The EnCHiL programme is a two-year MSc degree programme, aimed at providing high quality multidisciplinary research-based education in Earth and Environmental Sciences. To better understand the effects of changes in nature and society at high latitudes, it is critical to identify the processes underlying these changes. The EnCHiL programme presents the student with different natural, physical, biological and social processes operating at high latitudes, and how they interact to shape arctic environments. EnCHiL is a 120-ECTS programme (**Figure 4**). To be admitted into the programme students need to have completed a BSc with at least 90 ECTS in natural sciences, and be able to demonstrate proficiency in English, as the programme is offered only in English. All entry points have the same admission requirements, which can be found on the programme website (<https://enchil.net/>). The 120 ECTS of the programme are divided into 90 ECTS of coursework and a 30-ECTS research thesis, to be developed under the supervision of at least one expert from one of the EnCHiL partners. The programme has a mandatory mobility scheme, where all students will at least spend one semester at another EnCHiL university. The learning outcomes of the programme were developed in close collaboration with the EnCHiL partner universities. In addition, learning outcomes are defined separately for all the courses within the programme.

600049 Environmental Changes at Higer Latitudes, M.Sc (Courses in 2020-2021)	
First year	
Fall	Spring
1) 07.38.02 Arctic Climate Change 5e 2) 07.39.02 Climate Change Now 5e 05.93.03 IN&E issues at the Arctic edge - Nature of Iceland 5e 05.94.01 IN&E issues at the Arctic edge - Nature of Iceland, field excursion 2e (1Ve) 3) 07.37.02 Statistical tools for climate and atmospheric science 5e 07.36.01 ARCTIC CIRCLE 2e 07.85.03 Ecosystem Ecology and Sustainable Management 6e	08.33.01 Arctic Planning and Environmental Changes 2e 07.12.01 Graduate student seminars I 1e 08.31.03 ARCTIC FORUM 5e 05.85.02 Communication in environmental and natural resource issues 4e 08.32.01 EnCHiL Forum 1e 07.06.03 Ethics and Philosophy of Science 6e
1) ECGS031 Climate Change in the Arctic (5) [distance learning]. Online courses from University of Helsinki (oct-dec) 2) ATM302 Climate Now (2+3) [distance learning]. Online courses from University of Helsinki (oct-dec) 3) ATM308 Statistical tools for climate and atmospheric science (5) [distance learning]. Online courses from University of Helsinki (oct-dec)	
Spring. <ul style="list-style-type: none"> UAU201F Environmental Governance (6) [University of Iceland] 215162U001 Sea Ice Ecology (5) [Intensive 10 days course in Nuuk, Greenland (22. febrúar- 8. mars)] 	
Second year	
Fall	Spring
	10.10.15 Master Thesis 30e

Figure 4. Structure of the Nordic MSc programme in Environmental Changes at Higher Latitudes (EnCHiL)

The different entry points to the EnCHiL programme provide different curricular strengths. All EnCHiL study pathways ensure the student a solid scientific and technological knowledge base, while offering great flexibility in terms of curriculum. This gives EnCHiL students the opportunity to design and organise a programme that fits with their preferences. Decisions on the study plan for each EnCHiL student are made in close consultation with the local coordinators at each of the degree-awarding institutions.

The programme uses a variety of teaching methods, from joint courses across the three main partner universities that are offered online, to class-based and field excursions. The choice of teaching method is decided by the instructors, depending on what suits best for teaching a specific topic. Assessment of the courses is also diverse. At AUI most courses at the graduate level do not have a final exam, but rather rely on assignments and active participation in class as a main tool for assessment. Written assignments and presentations, as individual or group work are also common.

2.3.2.1 Actions

	Action	Deliverable	Deadline	Responsible party
Ch. 2.3.2	Teaching and Learning			
1	Review of the programme curriculum after three years of running the programme.	Revised EnCHiL curriculum.	May 2025	EnCHiL Programme Board.

2.3.3 Coordination between Teaching and Research

All EnCHiL instructors are active researchers, ensuring a real research-based education. Teaching within the EnCHiL programme focuses on thinking and learning, and training of critical and analytical skills. The curriculum contains a mandatory mobility period of at least one semester, which is instrumental to reach one of the EnCHiL programme's objectives: that the students attain first-hand, personal and deep multidisciplinary knowledge on the ongoing environmental changes at higher latitudes, and their effects on nature and society. In the second year of the programme, EnCHiL students have to work on their thesis project (30 ECTS), for which they have to find a suitable supervisor and develop jointly their ideas. This ensures that students have direct access to state-of-the-art research.

2.3.3.1 Actions

	Action	Deliverable	Deadline	Who
Ch. 2.3.3	Coordination Between Teaching and Research			
1	Find suitable supervisors for EnCHiL students to develop their MSc thesis.	The first cohort of EnCHiL students successfully complete their MSc thesis.	May 2022.	Programme Coordinator, EnCHiL students, MSc supervisors.

2.3.4 Conclusions

The EnCHiL programme is a recent addition to the studies catalogue of the Agricultural University of Iceland. Given the challenges of 2020, amid the COVID pandemic, the programme started with a relatively small number of students. This in turn, has brought many advantages in terms of flexibility for the students and the Programme Coordinators, and a greater ability to fix issues that naturally arise the first time that a programme is being run. The programme is expected to continue, and the admissions period is open for the fall 2021, when the aim is to have a maximum of 20 students.

2.4 Individual research-based MSc degrees (MSc 120 ECTS): MSc in Restoration Science (600017), MSc in Natural and Environmental Sciences (600021), and MSc in Forest Sciences (600027)

2.4.1 Students

The Faculty has 38% of all MSc students (82) registered at AUI. It is noteworthy that out of the 31 MSc students currently registered in the Faculty MSc programmes, 20 (65%) continued their studies after finishing their BSc from AUI, but 11 (35%) had an undergraduate degree from other Icelandic universities or from foreign institutions.

Teaching and course evaluations are taken online at the end of each course. The general attitude of students towards the courses offered in the MSc programmes is very positive. As well, as part of the graduate Study Programme, two whole-day seminars are organised each year with mandatory attendance of all MSc students, in situ or online. Each MSc student must present their thesis topic twice during their studies at these seminars. During the seminars, various other practical information sessions are organised for the students and some general discussions about issues that can be improved in respect to the graduate studies programmes are taken up. This venue has proven to be very important for creating an encouraging academic environment for the individual research-based graduate students, as they are otherwise quite spread among different campuses of AUI.

MSc students in Forest Sciences at AUI can become members of the Student Association Dafnar. Other MSc programmes do not have such programme-specific associations, but all MSc students can be members of the general Student Association of AUI. All graduate students at AUI also have a Facebook group, managed by the MSc student representative in the Graduate Studies Committee, where they can interact.

As the curriculum of the individual research-based MSc programmes is mostly selected around each individual student (except 14 mandatory ECTS for all), the Student Associations do not formally take part in the quality assurance of those programmes. However, all students can have direct inputs to various aspects of those programmes at the two annual Graduate Student seminars, described earlier.

At the beginning of each academic year, the Graduate Studies Coordinator has organised an orientation for all new MSc students at the Hvanneyri campus. Other orientation activities for the students are part of the Graduate Student Days, as described earlier. Recruitment of research-based MSc students has two main venues. First, when Faculty members have received research grants which support work of a graduate student, they advertise those positions nationally through different media. Second, graduate programmes are also presented at different student recruitment activities organised centrally by AUI, both in situ and online. There, some of the current MSc students are often involved for presenting the Study Programmes.

2.4.1.1 Actions

	Action	Deliverable	Deadline	Responsible party
Ch 2.4.1	Students			
1	Increase visibility of Student Association for MSc students.	Include presentation by the Student Associations at the Graduate Student Seminars.	October 2021.	Graduate Studies Coordinator, Student Association representatives.
2	Promote interactions between students conducting an individual research-based MSc.	Continue the organisation of Graduate Student Seminars.	October 2021.	Graduate Studies Coordinator.

2.4.2 Teaching and Learning

The aim of the individual research-based MSc programmes is to provide scientific education and training in Restoration Ecology, Natural and Environmental Sciences or Forest Science. When students apply to the research-based MSc, they are appointed a contact person from AUI's academic staff who helps them develop a research project idea and find qualified supervisors to form a MSc committee. Between two and four specialists are appointed to the MSc committee for each MSc student, who supervise the student's research work and help with selection of appropriate courses that support the individual studies. Among MSc committee members, one must belong to the Faculty, but others are usually linked to industry, institutions, NGOs or other universities. This is a very important strategy, as it ensures good and strong links of graduate students to society after graduation. This is beneficial not only for the individual student, but for the MSc programmes as a whole.

600017 Land Restoration Science, M.Sc (Courses in 2021-2022)

First year	
Fall	Spring
07.07.03 Research Methodology and Scientific Writing 6e 03.53.03 Ecological Restoration and Sustainable Land Management 6e	1) 05.79.03 Restoration ecology 6e 07.06.03 Ethics and Philosophy of Science 6e
1) Taught spring 2022.	
Second year	
Fall	Spring
07.12.01 Graduate student seminars I 1e	10.10.30 Master Thesis 60e 08.12.01 Graduate student seminars II 1e

600021 Natural and Environmental Sciences, M.Sc (Courses in 2021-2022)

First year	
Fall	Spring
07.07.03 Research Methodology and Scientific Writing 6e	07.06.03 Ethics and Philosophy of Science 6e
Second year	
Fall	Spring
07.12.01 Graduate student seminars I 1e	08.12.01 Graduate student seminars II 1e 10.10.30 Master Thesis 60e

600027 Forest science, M.Sc (Courses in 2021-2022)

First year	
Fall	Spring
07.07.03 Research Methodology and Scientific Writing 6e	07.06.03 Ethics and Philosophy of Science 6e
Second year	
Fall	Spring
07.12.01 Graduate student seminars I 1e	08.12.01 Graduate student seminars II 1e 10.10.30 Master Thesis 60e

Figure 5. Structure of the individual research-based MSc programmes at AUI: MSc in Restoration Ecology, MSc in Natural and Environmental Sciences, and MSc in Forest Sciences.

The research-based MSc usually involves a 60-ECTS independent research project and 60 ECTS in courses (**Figure 5**). Of these, 14 ECTS are mandatory courses: a course in scientific writing, a course on research ethics and active participation in Graduate Student Seminars. The rest of the courses (46 ECTS) should support the students in their individual research project and are chosen in coordination with the MSc committee. In some cases, the offer of specialised courses at the graduate level is limited at AUI, so these courses are taken at other educational institutions both in Iceland and abroad. These courses are selected to fit the profile of the research project. The thesis must be defended openly for the public and can cover a wide variety of research topics linked to the programme in question. The official language of instruction for graduate-level courses is English. The MSc programme in Forest Science has more formal course requirements than the other programmes, including a mandatory advanced statistical course and up to 60 ECTS in mandatory topic courses if the student has not completed a BSc in Forest Sciences; in those cases, the student conducts a 30-ECTS independent research project instead of 60 ECTS.

The courses offered to MSc students use a variety of teaching methods. For instance, in the mandatory courses, students actively participate in classes presenting their work orally or in written form, attend lectures and have individual assignments. Assessment of the courses is also diverse. At AUI most courses at the graduate level do not have a final exam, but rather rely on assignments and active participation in class as a main tool for assessment. Written assignments and presentations, as individual or group work are also common.

Even if the Graduate Study Committee oversees the three individual, research-based MSc programmes, the day-to-day coordination and supervision of those students takes place within the appointed MSc committee. As the number of MSc students has increased, it has become apparent that more support is needed for the individual MSc committees, as sometimes they are not very functional. Therefore, the establishment of a support system as the one now in place for PhD students and their committees would be very beneficial (see later). As the number of MSc students has increased in recent years, more Faculty members are acting as supervisors, but their role and expectations are often not clear to them. Therefore, formal supervisor training would be very helpful. As well, there are no guidelines defining whether Faculty members in academic positions are required to supervise graduate students and if there is a maximum number of students a Faculty member can take on.

There are plans to start a more organised MSc Programme in Restoration Ecology, which would support the need for more MSc level courses at AUI and the future development of the Land Restoration Training Programme (GRÓ LRT), with which the Faculty closely collaborates. Further, GRÓ LRT will start offering a diploma programme at MSc level at the Faculty in 2022.

2.4.2.1 Actions

	Action	Deliverable	Deadline	Responsible party
Ch. 2.4.2	Teaching and Learning			
1	Increase offer of specialised graduate level courses at AUI, as possible.	Two new graduate-level courses at AUI.	August 2023.	Office of Teaching and Learning, Head of Faculty.
2	Start using the same administrative programme for individual, research-based MSc Programmes as used for PhD Programmes (PhD Portal; see later).	MSc Portal introduced to UGLA.	August 2023.	Office of Teaching and Learning, Head of Faculty, Graduate Studies Committee.
3	Enhance the MSc Programme in Restoration Ecology to an organised master programme.	Develop the curriculum, secure permission from the University Board, advertise the programme.	August 2025.	Professor of Restoration Ecology, Office of Teaching and Learning, Head of Faculty, Rector.
4	Establish formally the diploma programme of GRÓ LRT.	Advertise the programme.	March 2022.	GRÓ LRT, Office of Teaching and Learning.
5	Clarify better obligations and limits for supervision work of academic staff.	Development of working rules for supervision of graduate students.	May 2023.	Graduate Studies Committee.
6	Start supervisor training at AUI and make it mandatory for all academic positions.	Set up a formal training course.	August 2023.	Head of Faculty, Human Resources Manager.

2.4.3 Coordination between Teaching and Research

The research projects developed by MSc students are conducted in close collaboration with supervisors at AUI on research topics actively developed at the Faculty. The relatively large size (60 ECTS) of the individual, research-based MSc projects makes the programmes heavily research oriented. In some fields, a relatively large part of the research done in Iceland is conducted by MSc students. For example, students in the MSc programme in Forest Science are strongly represented in the conference programmes of the annual Forest Science Conference in Iceland. Currently there is no formal requirement for publication of the results of MSc theses as scientific papers, but this should be encouraged when possible, as it is beneficial for the student, the supervisor(s) and the Faculty as a whole.

2.4.3.1 Actions

	Action	Deliverable	Deadline	Responsible party
Ch. 2.4.3	Coordination between Teaching and Research			
1	Encourage publication of results of MSc studies as peer-reviewed articles.	At least one published paper from each MSc thesis.	One year after graduation for each student.	Graduate Studies Coordinator, MSc supervisors, MSc students.

2.4.4 Conclusions

The number of graduate students has increased in recent years, and it has been challenging to ramp up the support system at the same rate. It is concluded that this has partially been achieved, with the expansion of the tasks of the Graduate Studies Committee (only dealt with PhD students until 2016) and now most recently with the addition of a 25% support administrative position. There are plans to increase the number of MSc programmes within the Faculty and it is not foreseen that any of the MSc programmes will be discontinued, as they are all relatively successful and offer skills and degrees not offered elsewhere in Iceland. It is anticipated that number of MSc students in the existing programmes will therefore continue to increase in the coming years and it would not be unexpected if the total number of MSc students could become similar to the number of BSc students in the future. This is a general trend at all Icelandic universities and stem from that prior to ca. 2000–2005, almost no MSc programmes were offered in Iceland and almost all professionals who continued their studies went abroad for their MSc and PhD education. This again is making a MSc degree becoming a minimum requirement for many positions outside academia, where PhD degree is generally needed, and therefore the intake rate to the existing MSc programmes continues to increase. Because of the above changes, it is important that the administration and support system for the graduate studies continues to adapt to the increasing student numbers. The increasing student numbers also make it more feasible to develop new MSc-level courses.

2.5 PhD programmes (600026 PhD 180 ECTS)

The Faculty offers PhD degrees in Environmental Sciences, Forest Sciences and Restoration Ecology. PhD programmes are 180 ECTS, where the independent research work is 150 ECTS and at minimum 30 ECTS of courses, of which 14 ECTS are mandatory graduate-level courses and 16 ECTS are selected around each individual project, either at AUI, another Icelandic university or abroad. The PhD programmes are managed by the Graduate Studies Committee of AUI. Three (to five) specialists are appointed to each PhD committee, who supervise the student's research work and help with selection of appropriate courses that support the individual studies. Among the PhD committee members, one must belong to AUI, but others are usually linked to research institutions or other universities in Iceland or abroad (at least one co-supervisor). To defend their PhD dissertation, PhD candidates must have produced at least three first author papers, where at least one is already published, and a PhD thesis which gives the overview of the research conducted.

The present PhD programmes at the Faculty were formally initiated in 2009, following the National Qualification Framework for undergraduate studies. In 2012, AUI and the University of Iceland made an agreement that the PhD Programmes of AUI would become part of the Graduate School of the latter. Recently, the University of Akureyri also made such an agreement for their PhD Programmes.

2.5.1 Students

In the beginning, when the PhD programmes were tested and developed, the number of PhD students was kept deliberately low. During 2010–2019 the total number of active PhD

students was kept at ca. 5. The first PhD degree from AUI was awarded in 2010, and since then only six PhD degrees have been awarded. Three of the seven PhD degrees awarded from AUI have been awarded by FEFS: two in Environmental Sciences and one in Forest Sciences. Since 2019 the emphasis on PhD studies has increased at AUI, with the establishment of a new internal funding system, the AUI's PhD Grants, which supports two PhD positions at the university. As well, the academic staff has been encouraged to include PhD positions in grant proposals. This policy change has led to an increase in the number of PhD students. Currently, there are 12 PhD students registered at AUI, 8 of them at FEFS (7 working towards a PhD degree in Environmental Sciences and 1 in Forest Science). This change follows the aims of the new strategy of AUI. Three students have graduated in the period 2017–2020, with time for completion of the programme varying between 3.5–10.5 years.

One student representative from graduate students at the PhD level actively participates in the Graduate Studies Committee of AUI. Some of the PhD students are staff members at the Faculty and can attend and have voting rights at the Faculty meetings, but currently there is no specific student representative for PhD studies at the Faculty meetings.

There are three mandatory courses (14 ECTS) that all PhD students must take. No specialised PhD level courses are given by AUI on a regular basis, but some such courses are still organised by Faculty members every year in connection to ongoing European projects and bilateral agreements (e.g. NOVA, ERASMUS, H2020 ITN projects, etc.). PhD students therefore frequently attend specialised PhD courses abroad.

The Graduate Studies Committee organises two seminars annually with mandatory attendance of all PhD students and international MSc students, in situ or online. These seminars are held in English and are not the same as mentioned earlier for MSc students. Each PhD student must present their thesis topic three times during their studies at this seminar series. These seminars are the main communication platform for PhD students, where they meet either in person or online once per semester and present their research and progress. The seminars are also a venue to bring forward information on programme structure, available courses, study exchange programmes, funding opportunities, student counselling and other services available within the university. This venue has proven to be very important for creating an encouraging academic environment for the PhD students, as they are otherwise quite spread among different campuses of AUI. Currently, there is no student association for PhD students available within AUI, but formally they belong to the general Student Association. A new student-led initiative, in the format of weekly informal online meetings where all PhD students are invited, started in early 2021. The initiation of this activity was encouraged and supported by the Graduate Studies Committee.

2.5.1.1 Actions

	Action	Deliverable	Deadline	Responsible party
Ch 2.5.1	Students			
1	Participation of PhD students in Faculty meetings.	At least one student representative present.	December 2021.	Head of Faculty.

2	Better formalise orientation programme for new PhD students.	Organised orientation schedule.	June 2021.	Graduate Studies Coordinator, PhD supervisors.
3	Establish support for a Graduate Student Association, within the general Student Association.	Graduate Student Association.	March 2023.	Graduate student representative in the GSC.
4	Offer at least one specialised PhD-level course at AUI and for the NOVA network.	One new PhD-level course at AUI.	March 2023.	Head of Faculty.

2.5.2 Teaching and Learning

The PhD programme is primarily based on the independent research of the doctoral candidate, culminating in the dissertation. Entrance requirements are a research-based MS degree or a comparable qualification in a relevant field. Doctoral studies are governed by special Faculty regulations which are currently under review. The thesis must be defended openly for the public and can cover a wide variety of research topics linked to the programme in question. The official language of instruction for graduate-level courses is English.

The Graduate Study Committee oversees the PhD programmes, but the day-to-day coordination and supervision takes place within the appointed PhD committee. A new system for monitoring the progress of PhD students and the corresponding PhD committee was implemented in the fall 2020, the PhD portal. This system requires submission of two progress reports at the end of spring and autumn semesters. All PhD students and their supervisors submitted a progress report through this system by the first deadline on December 1, 2020.

As the number of PhD students has increased in recent years, more academic staff members are now acting as PhD supervisors or co-supervisors, so this increases the need for formal training of PhD supervisors. At many foreign universities such a training is a requirement for academic positions, and a similar requirement would be beneficial at AUI. As for MSc students there is no specification in the rules of AUI regarding the requirements for academic staff as supervisors, or whether there is a maximum number of students they can supervise (if their teaching quota is not full). The increasing number of PhD students also makes the development of PhD-level courses more feasible. The courses offered to graduate students use a variety of teaching and assessment methods. At AUI most courses at the graduate level do not have a final exam, but rather rely on assignments and active participation in class as a main tool for assessment. Written assignments and presentations, as individual or group work are also common.

2.5.2.1 Actions

	Action	Deliverable	Deadline	Responsible party
Ch. 2.5.2	Teaching and Learning			
1	Review the rules for PhD studies at AUI.	Updated regulations for PhD studies.	May 2022.	Graduate Studies Coordinator.

2	Clarify better obligations and limits for supervision work of academic staff.	Development of working rules for supervision of graduate students.	May 2023.	Graduate Studies Committee.
3	Start supervisor training at AUI and make it mandatory for all academic positions.	Set up a formal training course.	August 2023.	Head of Faculty, Human Resources and Quality Manager, Rector.

2.5.3 Coordination between Teaching and Research

The research projects developed by PhD students are conducted in close collaboration with supervisors at AUI and from other institutions. Students are trained in research topics that are being developed within FEFS. The minimum requirement for PhD theses to be eligible for defence is to have one paper published, one submitted to a scientific journal and one in manuscript form (see earlier). Ideally this should be followed up by the supervisors and students to ensure that all scientific articles are published after completion of the programme.

2.5.3.1 Actions

	Action	Deliverable	Deadline	Responsible party
Ch. 2.5.3	Coordination between Teaching and Research			
1	Encourage publication of all results of PhD studies as peer-reviewed articles.	At least three published papers after finishing PhD.	One year after formal completion of PhD studies.	PhD supervisors, PhD students.

2.5.4 Conclusions

The number of PhD students was kept low during the first decade after the PhD Programmes were initiated at AUI. Since 2019 this policy has changed and AUI aims now at strengthening its PhD programmes and increasing the student numbers, in accordance to the new strategy of AUI. It is important that this change is followed by an appropriate ramping up of the support system, and the new 25% administrative position at the Office of Teaching and Learning for the graduate and post-graduate students in 2021 was a timely step in that direction. It is foreseen that number of PhD students in the existing programmes will continue to increase in the coming years and it would not be unexpected if the total number of PhD students could double in the next 5 years.

3 Summary and Main Conclusions for the Faculty

3.1 Lessons learned from QEF1

This report is the first evaluation of the Faculty of Environmental and Forest Sciences, since it was established in January 2020. The QEF1, although it was conducted for a different organisational unit, provides a solid starting point for this assessment. Many of the points raised in the QEF1 for the whole university have been addressed within the Faculty, for example in terms of research productivity and internationalisation. The present assessment has provided a good exercise of self-reflection and will serve as a reference point for the development of the Faculty in the future. Clearly, the Faculty needs to define a coherent strategy and set clear priorities for teaching and research, as well as a recruitment policy that allows the Faculty to grow and develop. As well, this self-review has made evident some areas that need improvement and others where we can be proud of.

3.2 Teaching and Learning

Teaching and Learning within the Faculty provide good opportunities for students, as indicated by the high retention rates of both undergraduate programmes (88–91%). Completion rates are low, but this can be partly explained by nearly half of the students taking the programmes as part-time students who are perhaps not intending to complete the whole programme in the first place. Students are generally satisfied, but the system for evaluation of courses should be improved, both to increase student participation and to ensure follow-up measures. There is good direct communication between students and teachers, but feedback mechanisms should be formalised, especially in terms of clarifying the actions that are taken in response to student feedback. The number of students is low compared to other universities in Iceland and abroad, but it has been steadily increasing in the last years. Due to the anticipated growth in MSc and PhD students it is important to put in place systems that will be scalable and will be able to accommodate the growth. A revision of the learning outcomes and the structure of the programmes, as is currently under way in the BSc in Natural and Environmental sciences will help increase the profile of the Faculty and the University as a whole, by making the Study Programmes more unique among Icelandic universities. Periodic review of the learning outcomes will also ensure currency and continued alignment with benchmarks of the relevant sectors. As well, the development of international MSc programmes and specialised graduate programmes, for example in Restoration Ecology, will undoubtedly contribute to strengthening the position of AUI in an international context.

As pointed out by the external experts, additional internal mechanisms should be deployed to ensure the standards of student achievement: 1) appropriate levelling of modules against the relevant framework for qualifications in higher education at the point of approval, including confirmation of the assessment strategy, type and volume of assessment and whether assessments meet the learning outcomes; 2) internal and external scrutiny of assessment exercises; 3) internal moderation of marking; 4) external verification of marks presented to an exam board.

3.3 Management of Research

Research productivity in the Faculty is very high compared to the average at AUI. The Faculty is active in research and excels in the fields of ecological restoration, ecosystem ecology, land use change, wetland ecology, soil science and atmospheric sciences. However, FEFS needs to develop its research strategy and priorities for research, as well as a recruitment plan to strengthen priority areas. Setting some specific targets and goals that are measurable will help in tracking progress and measuring the impact of the Faculty (e.g. number and quality of publications, research points in the University evaluation system, graduated MSc and PhD students, post-docs employed). The Faculty needs to develop measures to track impact on societal needs. To keep the research activity and quality on a high level, FEFS must keep a continued focus and give high priority on gaining external funding for research.

3.4 Follow-up Processes

The implementation of the Action Plan will be a standing item on Faculty meetings. As well, the Head of the Faculty will report formally to the rector on the status of the implementation and plans for the following year, no later than December 1 of each year. This will be followed up at the Executive Board of AUI. The Heads of Faculties will submit their reports to the Quality Committee of AUI no later than March 17. The Quality Committee will write a short report to the rector no later than April 1, which will subsequently be discussed in a meeting between the Quality Committee, the rector and the Heads of Faculties.