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# Educational Evaluation 2020/2021

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Self-evaluation of the Master's  
Programme in Forensic Science at  
Uppsala University

## Table of Contents

<b>1.</b>	<b>Introduction</b>	<b>4</b>
1.1	Process for self-evaluation	4
<b>2.</b>	<b>The 11 quality aspects</b>	<b>5</b>
2.1	That the study programmes shall comply with the provisions of the Swedish Higher Education Act (SFS 1992:1434) and the outcomes described in the Qualifications Ordinance, Annex 2 to the Swedish Higher Education Ordinance (SFS 1993:100), as well as programme-specific objectives, i.e., that actual learning outcomes correspond to expected learning outcomes.	5
2.2	That the content and teaching activities are founded on a scientific basis and proven experience.	7
	<i>Basis in research</i>	7
	<i>Scientific approach and ethical aspects</i>	8
2.3	That teaching focuses on the learning of students/doctoral students.	9
	<i>Students' responsibilities and influence</i>	9
	<i>Widening participation recruitment and programme completion rate</i>	10
	<i>Forms of teaching</i>	10
2.4	That the intended learning outcomes are examined using appropriate methods and in a legally certain manner, and that progression is ensured.	11
	<i>Fit-for-purpose and legally certain examination</i>	11
	<i>Cheating and plagiarism</i>	12
	<i>Progression and interprofessional learning</i>	12
2.5	That staff involved in the study programme possess relevant and up-to-date expertise in the subject matter, that they have pedagogical and/or subject didactic expertise, and that there is sufficient teaching capacity.	15
	<i>Teaching capacity</i>	16
2.6	That internationalisation, international perspectives and sustainability are promoted.	16
	<i>Internationalisation and international perspectives</i>	16
	<i>Sustainable development</i>	17
2.7	That a gender equality perspective is integrated into the study programme.	18
	<i>Work to achieve equal opportunities and prevent discrimination</i>	18
2.8	That the study programme meets individuals' and society's needs for learning and professional knowledge and prepares students for future careers.	18
	<i>The relevance of the programme to the labour market</i>	19
	<i>Preparation for future professional practice</i>	19
2.9	That students/doctoral students have influence on the planning, implementation and follow-up of the study programme.	21
	<i>Student representation</i>	21
	<i>Evaluation and feedback</i>	21
2.10	That all students and doctoral students are provided with an accessible and fit-for-purpose study environment.	22
	<i>Physical and psychosocial study environment</i>	22
	<i>Student support</i>	22
2.11	That continuous follow-up and improvement of the study programme is carried out.	23
	<i>Follow-up and development</i>	24
	<i>Course evaluations</i>	24
<b>3.</b>	<b>Summary</b>	<b>24</b>

**4. List of appendices** \_\_\_\_\_ **25**

# 1. Introduction

This self-evaluation is based on the 11 quality aspects in Uppsala University's Model for Review of Study Programmes (Appendix 1). The purpose of educational evaluation is to systematically contribute to ensuring and enhancing the quality of Uppsala University's courses and study programmes. One element of this is a self-evaluation in which the programme coordinator, teachers, students and employers contribute to providing perspective on the current situation and potential areas for improvement.

## 1.1 Process for self-evaluation

A working group consisting of the Master's programme coordinator and the departmental course administration has prepared documentation on which to base the self-evaluation document. Key performance indicators such as number of students, applicants per place, student completion, the percentage of tuition fee-paying students and teaching resources are retrieved from available University platforms, including the Ladok study documentation system, the NyA admissions system and the TimeEdit booking system.

Course evaluations are conducted after each course instance as part of the University's systematic quality assurance management (Appendix 2). Comments in course evaluations provide a student perspective.

In 2019, an alumni survey was conducted in order to offer former students the opportunity to give us the benefit of their experiences and views of the programme. This survey (Appendix 3) was sent electronically to all graduates from the programme since the beginning in 2008 for whom a current email address was available. The survey was responded to, anonymously, by 71 alumni, giving a response rate of 45%. In addition, alumni's self-reported workplaces and information from the professional network LinkedIn were compiled.

As several teachers are responsible for the different courses in the programme, we have also collected self-evaluations for the individual courses or had oral communication about the different courses included in the programme. The course directors have been asked to reflect on the current work within the course and what improvements are possible.

Interviews have been conducted with employers, with the aim of investigating how well equipped the graduates are when they enter working life and which areas employers consider to be a priority for students to receive training in during their studies. Interviewees were recruited by contacting employers that we know to have employed graduates from the programme. A total of nine representatives from the law enforcement, academic research and the private sector were interviewed by telephone during December 2020. The interviews (Appendices 4 and 5) were conducted by course administration and the responses compiled anonymously.

The programme's Working Group has authored this self-evaluation based on the above. A first draft was written during the autumn semester 2020 and spring semester 2021. A recent graduate of the programme submitted written comments that were included in the self-evaluation (Appendix 6). Self-evaluations for all programmes overseen by the Master's Programmes Committee at the Faculty of Medicine were discussed during a one-day residential conference in April 2021, after which they were revised and approved.

### *Freestanding courses*

Finally, four freestanding courses that are often taken by our programme students after completing the programme have been self-evaluated. These are in-depth courses in very specific areas that give students the opportunity to expand their experimental skills, as well as train their capacity for independent work. The four courses have very similar arrangements and will

therefore be evaluated together with shared comments regarding strengths, weaknesses and development areas.

The freestanding courses included in this self-evaluation are:

1. Advanced Course in Immunology, Genetics and Pathology, 30 credits
2. Advanced Course in Immunology, Genetics and Pathology, 15 credits
3. Experimental Immunology, Genetics and Pathology, 15 credits
4. Experimental Immunology, Genetics and Pathology, 7.5 credits

## 2. The 11 quality aspects

**2.1 That the study programmes shall comply with the provisions of the Swedish Higher Education Act (SFS 1992:1434) and the outcomes described in the Qualifications Ordinance, Annex 2 to the Swedish Higher Education Ordinance (SFS 1993:100), as well as programme-specific objectives, i.e., that actual learning outcomes correspond to expected learning outcomes.**

### *Responsible instance*

The Department of Immunology, Genetics and Pathology is the responsible instance for the programme. The organisation for the programme consists of a programme coordinator, director of studies and departmental course administration in the form of two course coordinators, five course administrators and one research engineer/laboratory coordinator. Together, this organisation has an overall picture of and is responsible for both the day-to-day operations and development of the programme.

Some courses offered in the programme are given by other departments within Uppsala University and are therefore the responsibility of a different organisation. An overview of the programme's in-depth courses is provided below and in Appendix 7.

Study plan	Period	Activity
<b>Year 1</b> <i>Broad knowledge and specialisation.</i>	1 (Sept-Oct)	Medical Genetics 7.5 credits
	2 (Nov-Jan)	Forensic Science and Criminalistics, 7.5 credits Forensic Genetics and Medicine, 15 credits
	3 (Jan-Mar)	Law, Psychology and Forensic Expertise, 15 credits
	4 (Apr-May)	Forensic Chemistry, 15 credits
<b>Year 2</b> <i>Substantial specialisation. Research and development work.</i>	1 (Sept-Oct)	Analytical methods in forensic science, 15 credits
	2 (Nov-Jan)	Start the degree project 45 credits, or elective course
	3-4 (Jan-May)	Degree project, 30 credits

The programme provides both breadth and depth and is intended to be able to prepare for work within the law enforcement, doctoral studies, work in research, teaching, government or industry. The course sequence has a well-thought-out progression, but also provides a combination of courses with different specialisations, as well as interdisciplinary content in the subject area.

The Master's Programmes Committee at the Faculty of Medicine gathers the programme coordinators of the nine master's programmes offered at the faculty plus student representatives. The Master's Programmes Committee discusses systematic quality assurance management and common procedures and guidelines for all the study programmes.

### *Goal attainment*

Intended course learning outcomes are presented during the introductory element of each course. They are also presented in writing in each course syllabus and made available to students via the Studium learning management system/Student Portal. We use assessment templates when grading degree projects and certain laboratory reports. In order to clarify knowledge requirements, assessment templates are made available to students.

The ambition is that all teaching activities within the programme should be conducted by someone with relevant expertise within the field in question, which means that multiple teachers are involved in each course. There is a risk that not all teachers are fully aware of the intended course learning outcomes or students' prior knowledge. Joint teacher days for the programmes at the Department of Immunology, Genetics and Pathology, with time set aside for separate meetings for teachers in courses and programmes provide the opportunity to inform about the objectives and discuss course content and modules.

The programme's various courses link intended course learning outcomes to examination questions on exams to check the achievement of goals. All theoretical courses are examined with exams and most courses also have one or more graded assignments. Most examinations and assignments are assessed according to assessment templates. In order to obtain the in-depth knowledge that second-cycle education should provide, several different independent assignments are included later during the programme, that are examined. The requirements in the assignments are increased from reporting, explaining and identifying to critically analysing, applying theories and justifying their choice of methods, for example. In written exams, these abilities are examined using essay questions. We strive to have a constructive link between the intended learning outcomes and the examination for all courses (see Appendix 8 with a matrix for goal attainments).

In some of the independent assignments the students themselves have the opportunity to propose further studies or to identify a scientific question. This opportunity is provided in several literature assignments, reviews of law judgments, formulation of a research plan (for a research grant task) and in the final degree project work. In these modules or courses, students get to compile, discuss and present research and new ideas within a specific subject, orally or in writing, or both. The written parts must contain an analysis, synthesis and evaluation of scientific research. Moreover, for the written reports, there is often a peer-reviewed opposition procedure by peer-students to stimulate discussion and critical analysis.

An additional aspect is to demonstrate progression within the programme based on the intended course learning outcomes. The students' progression and ability to analyse and synthesise are checked by the examination questions. From the beginning the questions are mostly about describing and presenting different concepts, methods and principles. As the programme progresses, the questions shift to more analysing questions and require the students to be able to identify problems. Later in the programme, the questions shift to the student being able to argue and discuss a problem or being able to defend their choice of a specific method in a particular situation. Exam questions used in later courses are thus formulated to demonstrate the ability to analyse and synthesise, requiring and demonstrating progression in skills and knowledge.

The final degree project also gives students the opportunity to demonstrate the ability to analyse and synthesise. In order to ensure good goal attainment for the degree project, an assessment is made by the supervisor, an examiner and an external examiner of the written text. Students receive written feedback on laboratory reports and the degree project. They also receive individual oral feedback on other written tasks during the programme, if desired. Moreover, for some written exercises, students peer-review each other's assignments in opposition exercises. The students also get to practice giving constructive feedback to each other. At the final oral

exam presentations and opposition, two teachers are present to perform a comprehensive consensus assessment of the degree project.

#### *General criteria for passing in all courses*

In order to demonstrate increasingly in-depth knowledge and skills in the programme, the students are examined through exam questions, written assignments and laboratory reports. Compulsory attendance is required at all laboratory exercises, demonstrations, group exercises and oral presentations (their own and peers). Most individual assignments and laboratory reports through the programme are assessed in terms of facts, conclusions and design and have the following requirements for a passing grade:

- Active participation in oral presentation, defence of the work and opposition.
- Written work/report approved by the supervisor, examiner and external reviewer that has passed plagiarism control.
- Approved work or laboratory report (in writing and/or orally) is also required for a passing final grade on the entire course.

All assignments and projects within the programme have a given timetable with fixed dates for written opposition, presentation and submission of reports and degree projects. This provides training in processing and solving scientific questions within a given time frame. In addition, oral presentations are given a timeframe that should not be exceeded, which provides training in compiling and presenting facts, results and conclusions in a concise and summarising form.

#### *Freestanding courses*

The freestanding courses "Advanced course in immunology, genetics and pathology and "Experimental immunology, genetics and pathology" are both in-depth courses of two different lengths. The teaching takes the form of laboratory work and self-study under supervision. The courses thus contain both theoretical and practical work under individual supervision. The courses give students from Forensic Science and other programmes an opportunity to gain both in-depth and broad knowledge in a specific research area.

Goal attainment is ensured in the courses through oral and written presentation of the obtained results. The final presentations are assessed by the supervisor of the project, which may provide some variation in the assessments between different teachers, and thus students. In addition, active participation is required in group meetings and departmental seminars, in agreement with supervisors. Participation in the various parts of the course is compulsory.

#### **Development areas**

- Supplementing with additional lecture topics to strengthen certain intended learning outcomes in the programme's goal matrix.
- Create grading templates for more of the programme's modules and courses.
- *Freestanding courses*: Develop clearer criteria to support supervisors' equal assessment of goal attainment.

## **2.2 That the content and teaching activities are founded on a scientific basis and proven experience.**

#### *Basis in research*

The Master's programme is interdisciplinary in its structure and the programme is conducted in close contact with a broad research environment in genetics, medicine, law and chemistry at Uppsala University. This provides a natural connection to current research and development work within many subjects and modules throughout the programme. The rich research environment at the Department of Immunology, Genetics and Pathology, which has the main

responsibility for the programme, generally received very good marks when Uppsala University was evaluated in connection with the research evaluation “Quality and Renewal 2017 (KoF17)”. The teaching within the programme is tightly linked to current research and knowledge by lectures and seminars held by experts in the forensic field, such as active researchers or professional practitioners in the private and public sectors. Moreover, specialist literature and up-to-date scientific papers are used as course literature. Students are also encouraged to participate in seminars about current research held at the Rudbeck Laboratory and Uppsala Biomedical Centre, as well as in digital lectures in various forensic forums.

The structure of courses – including course literature, lecture subjects and laboratory sessions – is reviewed annually by each course director and revised as and when necessary. This process contributes to teaching being continuously updated with new laboratory methods and lectures related to current research.

### *Scientific approach and ethical aspects*

The programme includes several course components that continuously develop students’ scientific approach. The students are given a theoretical background to the scientific approach, research ethics and good research practice during a seminar series called Professional training (PT), which is given during the first semester (see Appendix 9). The seminar series is common to several of the Master’s programmes in the Faculty of Medicine and includes lectures and group discussions in subjects, such as literature searches, scientific writing, plagiarism, ethics, pseudoscience and research fraud. These seminars are compulsory and to pass students require an 85% attendance record and a passing grade for a theory test. It also requires the submission of a short PM on an ethical dilemma, as well as attendance at a subsequent discussion on various ethical issues in smaller groups. Our student representative commented that the discussions in smaller groups were particularly helpful, whereas many students tended to become passive during the seminars attended by all Master’s students within the faculty. As it is not feasible to give all PT sessions in small groups, a suggestion is to design the seminars such that students are more actively involved.

Certain courses in the programme also include components that touch on ethics. The first course in the programme, *Medical Genetics*, includes a lecture on medical ethics plus a discussion seminar. The courses in *Forensic Science*, *Forensic Genetics and Medicine* and *Law, Psychology and Forensic Expertise* include several different elements where ethical aspects of forensic analyses, DNA databases, forensic medicine and cognitive bias are to be reported or discussed.

All courses in the programme include examination elements that require the student to search for knowledge and to critically review their own and others’ results. Examples of such exercises are laboratory reports, assignments to read and present scientific articles, formulate a research plan for a grant application for research funding, forensic case studies with PMs, critical review of other students’ PMs and planning of fictitious or real research projects. The programme concludes with a degree project in which the student independently plans and conducts a research project over 20 or 30 weeks. Ethical and critical review of their own results are assessment points when the student presents their project in writing and orally. The students also critically review two other students’ written projects.

The teaching staff consists partly of experts in criminalistics and forensic analyses, and partly of university teachers (active researchers). Lecturers in the course *Forensic Science* are mostly experts with long professional experience as forensic scientists from the National Forensic Centre (NFC) or crime scene investigators from the Police Authority in the Stockholm region. Some of these have a PhD and others have long internal training and experience as practitioners in the field. Other courses have a large number of academic lecturers in genetics, forensic medicine, forensic genetics, law, forensic chemistry and forensic analytical chemistry. The



majority of the course directors and teachers from Uppsala University who work within the programme are lecturers or professors with their own research in the forensic field. All teachers at the Faculties of Medicine and Pharmacy who have achieved associate professor level have earned qualifications of at least 7.5 credits of pedagogic training and also have extensive experience in teaching. In addition, nearly 20 doctoral students participate annually as course assistants, and many of take the university's basic course in pedagogy within the framework of their doctoral studies.

#### *Freestanding courses*

The courses are by their nature very closely related to current research. The teaching consists of practical laboratory supervision and theoretical discussions with their supervisors who are often active researchers in a medical or forensic field. In addition, students often participate in seminars, so-called journal clubs and other research activities on campus, in the department and in the research team.

#### **Development areas**

- Some research areas in chemistry, in e.g. certain types of spectroscopy, will lose their main competence due to retirements. The new appointment of senior lecturers would be desirable, but is governed by a department other than the Department of Immunology, Genetics and Pathology.
- It is desirable to involve more teachers from the Department of Immunology, Genetics and Pathology in the teaching as course directors.
- PT seminars in large groups can be designed to activate students more.
- *Freestanding courses*: Prepare clear instructions to supervisors regarding which research-related elements the student is expected to participate in, such as journal clubs, research planning and ethical discussions.

## **2.3 That teaching focuses on the learning of students/doctoral students.**

#### *Students' responsibilities and influence*

Personal responsibility is crucial to the student's learning. In order to clarify the student's personal responsibilities, the specific course learning outcomes and the various components of the course are presented during the introduction lecture to each course. This clarifies the expectations from the student in terms of attendance at compulsory course components, self-studies and handing in assignments. Every course evaluation includes a question in which the student is asked to evaluate the extent to which she or he has fulfilled the specific course learning outcomes, encouraging reflection over their own efforts.

The seminar series Professional Training (PT) includes a number of information sessions intended to both clarify the rights and mandate of students and to provide them with important tools for their future studies and professional practice. On the first occasion, the study counsellor for medical master's programmes and the student union participates with information. Seminars then follows on subjects such as study techniques, library resources, oral and written presentation of research, stress management, cultural intelligence, master suppression techniques and career paths. The programme also includes a compulsory seminar at the beginning of the first semester to clarify the University's policy on plagiarism and cheating (Appendix 9).

The students' rights and mandates are continuously monitored by the Medical Master Council (MMC), a sub-organisation of the Uppsala Student Union that brings together student representatives from the nine Master's programmes at the Faculty of Medicine. The task of the MMC is to promote student influence regarding the study environment and the quality of

common education modules. In addition, there is a student liaison officer at the Faculty of Medicine who assists with work to put students' rights in focus.

#### *Widening participation recruitment and programme completion rate*

Uppsala University and the programme strive for widened participation and good rates of student completion by offering language workshops, support to students with disabilities, student healthcare and study and career counselling. The programme strives to implement the recommended measures in Uppsala University's Action Plan for Widening Participation 2018-2020. At admission, the students are informed regarding the support the University offers to students with disabilities. This support is described in more detail in section 2.10.

In most years, the programme has experienced a gender imbalance, with significantly more female students than male. Among students admitted between autumn semester 2018 and autumn semester 2020, 86% were women. In order to broaden recruitment, the programme has reviewed the representation of students in videos and photographs on the website. We strive to make visible students of different genders and from various ethnic backgrounds.

As this is a second-cycle programme, recruitment is limited to those who already have experience of higher education. According to Uppsala University's Annual Report 2019, 75% of students on first-cycle study programmes at the Faculties of Medicine and Pharmacy are women. We are well aware that any imbalance in recruitment to underlying programmes may well limit the breadth of recruitment to master's programme in terms of gender, socioeconomic background, ethnicity and functionality. In the case of forensic science, one additional factor behind the gender imbalance may be that men interested in the field seek entry to the profession through a police education, while women seek entrance through the natural sciences, and that the gender balance in professional life is therefore more even.

The programme has a good student completion where only one or a few students per year do not complete their studies. Between 2016 and 2018, 64 students were admitted, of which 56 students graduated. This results in a student completion of 88%. Admission information shows that students apply for the programme out of a specific interest in forensic science rather than a general interest in natural sciences as the proportion of first-time applicants to the programme is high and averages 47%.

#### *Forms of teaching*

A variety of teaching forms are used within each course to promote students' learning. The most common forms of teaching are lectures, seminars, so-called flipped classrooms, group exercises, case studies, laboratory sessions, demonstrations, oral presentations and individual written projects. To ensure that the laboratory sessions activate as many students as possible, exercises are performed in small groups of two or three persons. Student activating components using for example padlet, quizlet or mentimeter to stimulate discussions and learning are included in all courses.

An example of a relatively newly introduced and student-activating component is a form of flipped classroom where students get to choose subjects/problem areas from the study material (recorded lectures) to discuss with each other and teachers in smaller groups. The students also have activity days where they can request lectures or more practical experience with certain methods or techniques, such as fingerprint visualisation, hair morphology, sampling of forensic traces (DNA swabbing, taping, cutting) or blood spatter analysis.

Feedback on laboratory reports and other assignments is very important for optimal learning of students. The student representative pointed out that the amount of feedback given varied between courses, and that some assignments were only graded without specific feedback. This could be increased to ensure that students get even more constructive feedback.

Over the past year, teaching methods have been strongly impacted by restrictions due to COVID-19. The teaching has mostly been conducted remotely with digital lectures, seminars and group work. Labs have been held on campus, but with physical distancing. Some students have perceived the distance learning as an obstacle to their learning. In order to stimulate learning in the best way possible, even remotely, we have continuously evaluated and improved our technical solutions and developed recommendations for both students and teachers regarding teaching via Zoom. As a complement to physical labs, we have introduced virtual labs using the Labster tool (<https://www.labster.com>). This tool has been highly appreciated by the students.

#### *Freestanding courses*

The students do their course within the framework of a research group's work with their own project or as part of a project, which provides extensive focus on the students' learning and development of independence.

The student completion is very high. Of the 36 students who started a project in 2018-2020, 34 have completed their course. The recruitment corresponds to that of the Master's programme and the Faculty of Medicine as a whole in terms of the distribution of gender, socio-economic background, ethnic origins and functionality.

#### **Development areas**

- Continue to test and evaluate technical solutions for virtual labs and distance learning.
- Introduce complementary virtual elements, such as basic laboratory techniques even after the university has returned to campus teaching.
- Promote that feedback is given on more assignments by teachers or peers.
- Use even more student-activating teaching, e.g. flipped classroom.
- Clearly link to information about language workshops, support for students with disabilities, student health care and study and career counselling in the learning platform Studium.
- *Freestanding courses*: Make information about the University's support available to students as described above.

## **2.4 That the intended learning outcomes are examined using appropriate methods and in a legally certain manner, and that progression is ensured.**

#### *Fit-for-purpose and legally certain examination*

The programme's are graded according to the scale: fail (U) , pass (G) and pass with credit (VG) courses, with the exception of the degree project and, as of the autumn semester 2022, the course *Forensic Science and Criminalistics*.

Most courses conclude with a written examination. These are always anonymised, with the student's name replaced by a code on the exam that is not decoded until the entire test for all students has been marked. The main basis for grading most courses is the exam result, where 60% correct answers are required for the grade pass (G) and 80% correct answers for the grade pass with distinction (VG). However, the VG grade on assignments is also required to obtain the final grade VG for some more comprehensive courses.

Examination forms vary depending on the expected learning outcomes. In addition to on-campus exams, there are laboratory reports, results presentations (from laboratories), home exams, written projects, discussion seminars and oral presentations. For laboratory reports,

some assignments and the degree projects, assessment templates are used to ensure goal attainment and legal certainty when grading. See example assessment template in Appendix 10.

### *Cheating and plagiarism*

The programme works with a number of strategies to prevent cheating. A compulsory seminar on plagiarism and the University's policy on cheating is held at the beginning of the first semester. Moreover, detailed information about consequences of cheating is distributed to the students at each exam. It is also beneficial to vary the form of the examination from both a learning perspective and as a tool to combat cheating. Traditional examinations and other written assignments are therefore interspersed with written tasks, oral examinations and home exams.

Our student representative pointed out that although information on plagiarism is given, the student group have diverse backgrounds and differ in perception of what might be regarded as plagiarism. Some students have not encountered anti-plagiarism software such as Urkund before. Hence, it could be good to be even more clear in the introductory seminars and give specific examples.

Most of the programme's courses include laboratory sessions. A passing grade for a laboratory session requires active participation in the practical elements and a pass for the individual laboratory report or oral presentation, depending on the course. Degree projects are always undertaken individually. For the degree project, the supervisor will also submit an assessment of the student's practical and theoretical skills. In addition to an assessment of skills, an evaluation is also given about the student's ability to work individually.

All written assignments and examination answers submitted by the student are reviewed using the Urkund text-recognition system to detect any signs of plagiarism.

### *Progression and interprofessional learning*

The courses within the programme are given in a logical order and begin with general human molecular biology/medical genetics and an introduction to forensic science. This is followed by forensic genetics and forensic medicine. Legal knowledge and forensic expertise are taken up after that and this is finally followed by two courses with specialisation in analytical and forensic chemistry. The courses build on each other and we work continuously to ensure that the overlaps are minimal. To achieve an even better progression within the programme, a reorganization of the course order was done from the autumn 2019, which allow a longer degree project to be performed.

All course directors are aware that the student group often has a heterogeneous background. They come from different international environments and may have studied several different Bachelor's programmes with a focus on chemistry and biology. This is often discussed on programme days and we have worked with study materials and lectures in molecular biology or chemistry to fill the gaps. Laboratory introductions are also carried out, if necessary, to harmonise the students' knowledge and ability to perform the laboratory parts of the programme. The joint teacher days for the programme also provide an opportunity to discuss and work with bridging background heterogeneity and progression within the programme. If necessary, the programme coordinator convenes further meetings with one or more of the course directors within the programme to discuss new arrangements, progression or new courses.

Continuous progression within the programme is achieved by increasing the difficulty and complexity of the teaching material (judgments, textbooks, films, scientific articles), the assignments and laboratory work later in the programme. There are sometimes common topics,

issues and assignments that are addressed from different aspects in several courses. For example, students write a mandatory expert report about their results where they performed DNA analyses in a fictive forensic case during the course in *Forensic Genetics and Medicine*. The same report is resumed during the course in *Law, Psychology and Forensic Expertise* where it is analysed and discussed from a recipient perspective, i.e. the court's and the judiciary's understanding of the content and, most importantly, of the conclusions.

The theoretical progression and the increasing difficulty and challenges during laboratory and theoretical elements are addressed when the programme is introduced and the programme overview is discussed. In general, it can be said that progression is achieved by giving the students less and less instructions and guidelines on how to carry out the work during the course of the programme. This will improve the skills in being able to perform tasks individually even with limited information. Below are two examples of how the instructions for two different tasks has become less detailed, and thus require more independent efforts from the students.

Excerpt from instructions from the first course in *Forensic Science*, 7.5 credits:

Write a 3-4 pages PM about a forensic method that you find interesting.

- Describe the method in general
- Describe the pros and cons of the method
- Compare with other methods
- Describe the evidentiary value of the method
- Conduct a discussion about the usability of the method
- Speculate on whether you believe the method will be used in the future, will be further improved or will be replaced by other methods

Excerpt from instructions from the following course in *Forensic Genetics and Medicine*, 15 credits:

- Write a 3-4 pages PM on a forensic genetics subject
- Use 3-5 scientific articles that are summarised
- Include a detailed discussion and your own reflections

As an example of progression in laboratory work, all laboratory work in the course in *Forensic Genetics and Medicine* during semester 1 and is performed according to laboratory protocols that are distributed and all students perform the same experiments. In contrast, in the course in *Analytical Methods for Forensic Science* in semester 3, students are given a problem. Based on the problem, the students must independently plan, motivate and carry out sampling and independent laboratory analysis. The students work in small groups and discuss their strategy to solve the problem. When an appropriate plan of the laboratory experiments exists, this must be approved by the teacher. They then organise and carry out their sampling, analyse the samples, and evaluate the results obtained (course assistants are available during the laboratory sessions). Different lab groups have received different problems and the reporting of the results are performed both orally in front of all students, and in a written report. This arrangement of laboratory work within the programme means that the students go from working in groups according to clear instructions with easy-to-follow protocols to planning and performing their own laboratory work later in the course based on one of several problems. Thus, progression with a high degree of independence and good preparation for the individually performed degree project are achieved.

Examples of two of the six different problems for the laboratory task that can be answered:

- A method shall be developed to detect the presence of warfarin in blood and, if necessary, quantify the amount thereof. The method should be used in case of suspected poisoning of pets (dog/cat). For this purpose, an HPLC instrument with UV detection is available.
- A rapid method for analysing the substances ephedrine, codeine and sildenafil in tablets/powders should be set up. For this, there is a CE instrument with diode-array detection. The method is

intended to be used by the customs (border control) for some common illegally imported tablets/drug preparations.

To ensure progression from a first-cycle degree project to a second-cycle project, it is required that:

- The question is based on in-depth analysis of the knowledge in the field
- The literature is thoroughly reviewed and evaluated
- The general usability and impact of the results is discussed
- The results is evaluated in relation to other recently published research
- Ethical aspects are included and discussed

In order to achieve progression, the courses are given in the same order as criminal investigations are carried out during semesters 1 and 2. Initially, students are taught about crime scene investigations, trace analysis, fingerprint examinations, DNA analysis, forensic medical examinations and then about handling of cases in the court process. Since the courses in forensic and analytical chemistry contain laboratory work that is carried out more independently, these courses are last in the programme.

The programme is multidisciplinary by nature and as forensic science aims to support the society and its legal system, there are considerable opportunities for interprofessional learning within the programme. The students interact with police officers, crime scene investigators, forensic scientists, criminalistics experts, geneticists, forensic pathologists, archaeologists, lawyers, chemists and researchers during their courses. The training thus give insight into several professional roles and understanding of how different parts of the justice system must work together to maintain legally secure criminal investigations. All of the above-mentioned professions participate in some part of the teaching with lectures, laboratory exercises, assignments, demonstrations or study visits. A few years ago, a need for widened interprofessional interactions around legal matters was identified. Therefore, the new course *Law, Psychology and Forensic Expertise* was introduced as a part of the study plan. This course give students insights in the court process, legislation, confirmation bias and the evaluation of forensic evidence in court by judges, prosecutors and defense lawyers.

#### *Freestanding courses*

The courses provide the opportunity for training in scientifically describing a medical or forensic issue. In addition, the student must independently plan and conduct scientific experiments to answer a question and apply a scientific approach. The student is trained to understand and describe different methods to address a problem, process the collected data and illustrate the results in a scientific way. The students also get to practice compiling, critically analysing and evaluating the results obtained and are provided opportunities to communicate theories and research results with senior researchers in projects that are within the subject area immunology, genetics and pathology. This progression from earlier courses is ensured by the follow-up presentation of the students' work in oral and/or written format.

#### **Development areas**

- Continue to gather all course directors for an annual programme day to harmonise strategies around students' prior knowledge and goal attainments.
- Develop clearer information for students about cheating and plagiarism in home exams, as this year's increased number of home exams has entailed an increased number of plagiarism cases.
- Review the course content and order regularly to ensure and improve progression.
- *Freestanding courses*: Provide clear instructions to supervisors (as specified in 2.1) with information about examination of the learning outcomes.

## **2.5 That staff involved in the study programme possess relevant and up-to-date expertise in the subject matter, that they have pedagogical and/or subject didactic expertise, and that there is sufficient teaching capacity.**

### *Continuing professional development of teachers*

The department has staff responsibility for the employed teachers and therefore also the primary responsibility for their continuing professional development. Teaching activities involve both doctoral students and staff in research and teaching posts. Their continuing professional pedagogic and didactic development is supported by the department and the University centrally in a number of different ways.

Doctoral students are offered an introductory course in teaching via the Disciplinary Domain of Medicine and Pharmacy. This course covers 1.5 higher education (HE) credits and is one of the compulsory courses required in a third-cycle programme for a Degree of Doctor or Degree of Licentiate. One perceived obstacle to teaching among doctoral-level students is that their appointment is for a fixed term and teaching reduces the time available for completing their research. To address this concern, since 2018 the Department of Immunology, Genetics and Pathology has applied a system that extends a doctoral student's employment by a period equivalent to the time the doctoral student has spent teaching.

It is sometimes difficult to recruit an adequate number of doctoral students with the appropriate methodological and subject knowledge to teach in highly specialised laboratory work. This is due to the very broad scope of the Department of Immunology, Genetics and Pathology's field of activity and the fact that some doctoral students either work clinically or in areas that are not linked to the current courses. Since the doctoral students' teaching time is limited to 320 hours throughout the doctoral programme, this means that they in practice teach a course 1-3 times before being replaced. In order to bridge replacements of teaching doctoral students, we have recruited a lab coordinator on a position of 80% of full time, who, among other things, introduces new assistants to the laboratory sessions and acts as support in the planning and implementation of the various practicals. The lab coordinator also evaluates various methods and technical solutions that can develop the laboratory elements further, or switch to newer methods and equipment. Our laboratory coordinator thus works continuously to introduce new doctoral students to teaching, ensure quality and develop the teaching methods.

Teachers are offered pedagogical development through conferences, courses and seminars arranged by the Unit for Academic Teaching and Learning at Uppsala University. Teacher training and qualifications are a requirement to get appointed to certain positions at the faculty, such as senior lectureships and professorships, and to be accepted as unpaid associate professors.

The programme arranges an annual teacher day for programme coordinators and course directors, at which teaching and learning issues are discussed and invited speakers present various pedagogical methods and tools. Since the programme is interdisciplinary and several departments with expertise in forensic medicine, law and chemistry contribute teaching, these teacher days are important for discussing teacher capacity, teacher competence, goal attainments and continuous professional teaching development.

### *Teaching capacity*

The teaching capacity is satisfactory in terms of quality as everyone who lectures has either very specific forensic expertise or holds a doctoral-level degree and teaches in their own research areas. There are also several teachers who contribute to the different courses and can replace other teaching staff for more general subjects as genetics or medicine, if necessary. Teachers in the Department of Immunology, Genetics and Pathology are encouraged to attend teacher training and to conduct their own research to ensure their own subject development and high-quality education. Other departments have similar incentives for continuing education, while the Police Authority have a lot of internal training for their staff. The researchers who teach forensic medicine often have combination employments where they also work clinically as a forensic pathologist at the National Board of Forensic Medicine (RMV). Most other teachers are either employed by Uppsala University or by the Swedish Police Authority.

### *Freestanding courses*

The teaching depends on individual researchers taking on students for in-depth courses and having the time and resources to supervise and give the student practical skills. It has been shown that many researchers prefer to take on these students when they are at the end or have already completed their education and thus already have a lot of knowledge and can contribute more to the project development.

On the Department of Immunology, Genetics and Pathology's website, there is a project bank where supervisors can make advertisement for available projects, both for freestanding course projects and for degree projects.

### **Development areas**

- Introduce additional teacher continuing education on the programme days for the continuing education of our teachers.
- *Freestanding courses*: Keep the project bank up to date and periodically send out mailings to research group leaders to remind them to advertise projects.

## **2.6 That internationalisation, international perspectives and sustainability are promoted.**

### *Internationalisation and international perspectives*

There are a number of ways through which students gain international experience when studying the programme. The study environment is by nature international, as a majority of students and many teachers come from countries other than Sweden, and all teaching takes place in English. In the past two years, the ratio of Swedish to foreign students has been 4:6. A compulsory seminar titled "Cultural Intelligence" is held early in the programme's first semester as part of the *Professional Training* series. This is intended to allow students to reflect over cultural differences and to provide them with tools to function well in multicultural contexts. The PT seminar series also provides a lecture on sustainable development globally and some in some courses it is discussed how the sustainable development goal of safety can be achieved nationally, internationally and globally.

While the programme does not have its own exchange agreements with foreign higher education institutions, students are provided with opportunities to study abroad through the University's Erasmus programme. The main window for mobility is during the final semester, when approximately 30% of our students choose to conduct their degree project outside Sweden. Although it is also possible to study abroad earlier in the programme, this is more difficult due to the specific topic of the programme, making it difficult to find courses of relevance to the



programme's unique profile at other institutions. An exchange also needs to be prepared far ahead which may be challenging as the program is relatively short.

In the course of the programme, comparisons are made between the legal systems of different countries and globally with regard to investigations, methods and legislation for work within the judicial system. As an example, the course *Law, Psychology and Forensic Expertise* provides a lecture by a researcher who has worked with the investigation of the wrongfully convicted in the United States. Another example is comparisons between different countries' legislation and the use of databases with DNA profiles that are made during the course in *Forensic Genetics and Medicine*. Forensic science is a small research area in Sweden and international research is often referred to in the programme. The teachers in the different courses have many international collaborations and the students often do their degree projects in these international laboratories.

In the interests of exchanging internationalisation experiences and developing joint strategies, the programme participates in the PIGG network for programme internationalisation within the Committee for Undergraduate Education. The network consists of representatives of medical and pharmacy study programmes and meets twice each semester.

As the Department of Immunology, Genetics and Pathology gathers researchers from many different countries, a large proportion of teaching staff have international background. Teachers also gain experience through international research collaborations, post-doctoral studies and overseas conferences. At university-wide level, international teacher exchange is promoted by encouraging staff to apply for grants via the Erasmus Programme to visit other higher education institutions in the EU/EEA as a visiting lecturer for time periods from 2 to 60 days. However, this opportunity is rarely used by teachers due to lack of time. The University also has an Advisory Board for Internationalisation and an Adviser to the Vice-Chancellor in Internationalisation, which work to promote collaborations in education and research between different universities worldwide.

### *Sustainable development*

Although sustainable development is not currently part of the intended course learning outcomes, there are elements in the programme related to the area. Professional Training provides a seminar on sustainable development and Agenda 2030, as mentioned above. Course content about judiciary aspects is also linked to Goal number 16 about peace and justice in the United Nations Global Sustainable Development Goals: "*Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels*". Forensic science itself contributes to justice by providing knowledge and expertise in a well-functioning legal system in an international and global setting. Forensic science is also useful to solve questions associated with immigration, migration and refugee reception. On the one hand, kinship and family investigations are carried out for family reunions, and on the other hand, age predictions (DNA, dental status, X-ray exams) are carried out to assess whether specific asylum reasons exist on the basis of a person being a minor. These tests are pursued by the National Board of Forensic Medicine (RMV) where several of our teachers work. The tests and methodological issues are therefore discussed in terms of precision, but are also discussed from a sustainability and ethical point of view.

### *Freestanding courses*

Here the same perspective applies as for the entire programme.

### **Development areas**

- The global perspectives included in the courses can be formalised in the specific learning outcomes in the syllabus.

- The links between forensics and sustainable development could be pointed out more, and perhaps discussed during flipped classroom sessions.
- Highlight the possibility of teacher exchanges for the department's staff and inform that it is possible to get financial support also for shorter exchanges.
- *Freestanding courses*: Promote teacher exchanges as described above.

## **2.7 That a gender equality perspective is integrated into the study programme.**

### *Work to achieve equal opportunities and prevent discrimination*

Both the University and the Department of Immunology, Genetics and Pathology have working groups that actively conduct equal opportunity work to increase accessibility at the University as a whole. At the department level, there is broad representation among our course directors and teachers in terms of ethnicity, age and gender. The Department of Immunology, Genetics and Pathology and the programme strive to follow Uppsala University's Action Plan for Equal Opportunities. In addition to university-wide measures, the Action Plan also lists measures for which each study programme is responsible, such as accessibility activities and equal opportunities information.

In order to equip students with knowledge and practical tools to work with ensure equal opportunities, there are compulsory elements on gender equality, master suppression techniques and cultural intelligence included in the Professional Training seminar series. The course *Law, Psychology and Forensic Expertise* discusses equal opportunities and how suspects, persons in custody and convicted prisoners have been treated differently based on gender or ethnicity in certain cases that are taken up during the course.

The information sheet for each course also informs students that discrimination is unacceptable, whether between students or between staff and students. This document contains contact details for the department's equal opportunities representative, to whom students can turn, if necessary. The anonymous course evaluation that concludes each course also includes a question about whether the student has experienced any form of discrimination during the course. If a student reports that they have experienced discrimination, this is further investigated and handled to the extent possible.

### *Freestanding courses*

Here the same perspective applies as for the entire programme.

### **Development areas**

- A more even gender balance among students would be desirable, see paragraph 2.3
- Follow up proposals for development areas from the UU Action Plan; for example, opportunities to combine studies with parenthood.
- *Freestanding courses*: Work on the basis of UU's action plan as set out above.

## **2.8 That the study programme meets individuals' and society's needs for learning and professional knowledge and prepares students for future careers.**

### *The relevance of the programme to the labour market*

The programme's teachers are professionals in forensic science or conduct research in the field, which means that there is an insight into the labour market's need for forensic experts. The contacts created through cooperation with the law enforcement and teachers from the police, NFC and RMV provide course directors with good insight into society's need for professional knowledge and specialised competence in the field. In addition, an alumni survey has shown that approximately 30% of the students work within the forensic field in Sweden after their studies, and a further large number of alumni work abroad in forensic routine or research laboratories. The breadth of the programme also means that some students choose the programme to deepen their knowledge in biology and chemistry without a clear intention to later work in the field of forensics.

The programme started in the autumn 2008, and a review of the students who have completed the programme since then shows that they currently work in many different areas. During the years 2010 to 2019, a total of 159 students graduated, and there is information on where 53 of these students worked at the time of the alumni survey. A total of 16 (30%) alumni worked within forensic science as civilian crime scene investigators or forensic experts at the police, NFC or RMV. The programme is also a good foundation for further doctoral-level education and 15 of the alumni who responded to the survey have gone on to doctoral studies. Other alumni work in research, in clinical routine laboratories or in the pharmaceutical industry. This survey shows that students' education with a broad and deep knowledge in general is attractive in many areas of the labour market.

Employer interviews also show a growing need for specialised expertise in biology and chemistry. The employers are generally very satisfied with the students' general abilities (e.g. communication, collaboration, analytical skills) and do not call for further training in any particular area. Several of the employers mention that it is positive if students acquire additional specialisation. However, the areas in demand vary widely. The employers predict different developments for alumni in forensic science over 5-10 years. Some see an increased demand for biological/genetics competence as DNA evidence is becoming increasingly important. Further need for specialisation to stimulate career development may also be needed in the future.

### *Preparation for future professional practice*

As mentioned in section 2.6, the programme aims to increase students' international experience and cultural understanding as this is important in a future professional career, during which they will meet and work with people from diverse cultural or ethnic backgrounds. In addition to the course component on cultural intelligence, students are continuously trained to work in different international constellations by mixing student groups. The degree projects are also usually carried out in an ethnically diverse workplace in Sweden or abroad.

The programme works in various ways with interprofessional learning where students meet teachers from all parts of the justice system, from crime scene investigators, forensic laboratory staff, coroners, forensic geneticists, forensic analysis experts and lawyers. The natural sciences also have a wide range of teachers who are medical researchers, molecular biologists, chemists, toxicologists and pharmacists. The teachers are active at four different departments within the Faculties of Medicine and Pharmacy and one department at the Faculty of Science and Technology. One of the programme's courses, *Law, Psychology and Forensic Expertise*, is given in collaboration with the Department of Law at the Faculty of Humanities and Social Sciences. Within this course, a simulated court trial is performed together with law students, which provides practice in collaboration with students in programmes preparing for other professions. So-called Innovation days and career days within PT or courses such as literature projects and degree projects also provide additional opportunities for interprofessional learning. All in all, this gives students opportunities to reflect on and develop a professional approach.

The students receive theoretical education regarding traditional methods and techniques in forensic science, and they also receive practical training through many modules with laboratory work. New methods and techniques in the forensic field are often introduced to the students through the lectures, laboratory sessions and study visits offered by the programme. Direct contact with law enforcement professionals and teachers with their own research offers great opportunities to rapidly update teaching to include the latest development. The degree project also provides an extensive opportunity to get in touch with new methods and technologies in ongoing research, that will be useful in future professional life.

The alumni survey showed that several former students wanted an even stronger connection to working life. For example, they called for more study visits, contacts with employers and information on labour market requirements and opportunities for alumni in forensic science. The student representative, as well as some of the employers interviewed, pointed out that more in-depth laboratory skills within criminalistics would be useful as some techniques are only covered once. For example, more extensive training in fingerprint techniques would be beneficial.

We see a need to further prepare the students for their future career as some authorities have specific requirements for Swedish citizenship, language skills and that the applicant need to pass a so-called pattern recognition test.

The employer interviews drew our attention to the importance of giving students an insight into which skills are required for certain types of positions, and how culture and working methods generally apply within the Police Authority. Furthermore, through the interviews, we have identified different subject areas where in-depth expertise is requested, e.g. criminology, law, bioinformatics and IT forensics. During the elective period in semester 3, students have the opportunity to take freestanding course, where these subjects may become relevant choices.

#### *Developing generic abilities*

The programme strives to develop students' generic abilities through various practical exercises and theoretical content. The Professional Training seminar series provides a theoretical framework and point of departure for self-reflection in a number of areas such as scientific writing, scientific approach and collaboration.

In practice, students are trained by performing laboratory work in smaller groups. Generic skills are also trained with individual laboratory reports and other written assignments that require independent processing of data, analysis and the ability to express results scientifically both orally, and in writing. Popular science communication is trained during degree projects, as the written report must contain a popular science summary. The students also write an expert opinion for lay people during the course in *Forensic Genetics and Medicine* that provides practice in explaining complex results on a popular science level. Many courses include group exercises in both theoretical and laboratory modules and are intended to reinforce students' collaborative skills and leadership ability.

The interviews with employers showed that the interviewees are generally very satisfied with the generic skills of our alumni, such as communication, collaboration and analytical skills. They did not call for further training in any particular area.

#### *Freestanding courses*

The courses provide extensive opportunities to gain additional skills both theoretically and in practical laboratory work as well as generic skills in an active research environment. For students interested in academic research, the courses contribute to a good foundation for future working life and a career in science.

**Development areas**

- Alert the students early in the programme that certain authorities have requirements for Swedish citizenship, language skills and pattern recognition tests.
- Introduce a lecture with an invited person (with experience in recruitment) from the Swedish Police Authority to give students insight into career opportunities and the authority's culture and working methods.
- Compile a list of recommended subject areas for the elective period to guide students.
- A majority of employers stated that references from the programme are very important in new hires. We should draw the students' attention to this early in their education.
- Review the possibility of more study visits. Engage former students working in the law enforcement or other interesting professions to talk about their work.
- Include more practical sessions where forensic techniques are practiced.
- *Freestanding courses*: Draw the attention of Master's students to the fact that the project courses provide the opportunity for additional knowledge and skills that prepares for working life.

**2.9 That students/doctoral students have influence on the planning, implementation and follow-up of the study programme.***Student representation*

Each group of admitted students has at least two student representatives who are elected during the first semester to represent the entire programme. Student representatives act as a link between the student group and the course/programme administration. Although the programme does not hold regular meetings with student representatives, meetings may be convened to discuss issues as and when they arise. Student representatives also participate in meetings with the Medical Master Council (MMC). MMC, a subdivision of Uppsala Student Union, which brings together student representatives from the nine master's programmes offered at the Faculty of Medicine. MMC is to promote student influence over the studies, programmes and courses. MMC meets once a month and also has representatives in the Master's Programmes Committee (MPK) and the Bachelor's Programmes Committee (GRUNK) at the Faculty of Medicine.

*Evaluation and feedback*

Each course is evaluated anonymously in writing at the end of the course. See examples of course evaluation in Appendix 2. The results of course evaluations are circulated to all teachers who have been involved in the course, as well as the course director, programme coordinator and director of studies. The course director then summarises student feedback and proposes and discusses possible improvements in a course report. The course report is sent to students by email and uploaded to the course page in the Student Portal/Studium, to be available to the current as well as the following year's students. Course directors are also encouraged to explain any changes made to the course in response to the previous year's student feedback during course introductions. We aim to complete the course report within two months after the end of the course. However, course reports, and hence also the feedback to current students, are sometimes delayed.

Written evaluations are implemented digitally using the in-house tool Kurt for digital questionnaires. Course evaluations remain open to students throughout the course and for two weeks after it is finished. We send both personal and automated email reminders to complete the evaluation. Student representatives are also encouraged to remind their fellow students to fill out course evaluations. Despite this, response rates are often low, averaging 46% during the past

year. This naturally has an impact on student influence. Some courses also use oral evaluations at the end of the course or formatively during the course.

#### *Freestanding courses*

The students have the same influence over their education as throughout the programme. In addition, students often have the opportunity to influence the content of their studies by planning the work together with their supervisor.

#### **Development areas**

- A higher response rate on course evaluations would strengthen student influence. It is possible that a scheduled time to complete the questionnaire at the end of the course may help.
- Strive to complete all course reports in time so that students receive feedback in a timely manner.
- Formative evaluations have been used for some courses but could be used more frequently, and in all courses.
- *Freestanding courses*: Personal reminders via email may possibly increase the response rate on course evaluations.

## **2.10 That all students and doctoral students are provided with an accessible and fit-for-purpose study environment.**

#### *Physical and psychosocial study environment*

On-campus teaching is largely conducted at the Rudbeck Laboratory and Uppsala Biomedical Centre (BMC), where facilities managers are responsible for issues related to the premises. According to facilities managers at each campus area, all teaching premises, including lecture halls, laboratories, group rooms, canteens and reception areas, are accessibility adapted. Students have access to most premises for teaching around the clock. At the Rudbeck Laboratory and BMC there are also special rooms for resting available. The Uppsala Biomedical Centre also has a prayer room.

Students use the department's research laboratories while working on their degree project and other project-based courses. The department is responsible for these premises and accessibility may vary somewhat, but provides a good environment in general.

The Master's Programmes Committee at the Faculty of Medicine has established a Communication Plan with information about where students can address questions or complaints about programmes, courses or the study environment (Appendix 11). This document clarifies the best channels of communication between students and course and programme coordinators, directors of studies, equal opportunities representatives, the head of department, student liaison and the Student Union in order to resolve any issues as quickly and easily as possible. The Communication Plan is distributed to all students at the start of the programme and is also available on the programme's page in Studium/the Student Portal.

#### *Student support*

Students can obtain support regarding the psychosocial work environment and their study situation from a number of organisations within the University. In conjunction with the start of the programme, representatives of these organisations present their activities and support. Information is also provided in writing in the introductory material given to all new students.

The Master's programmes at the Faculty of Medicine have a common study counsellor function that is available to advise students on matters around their studies, study environment and career planning.

The Student Health Service offers advice and support related to student life, including psychiatric disorders, stress and alcohol problems. It is free of charge for students to visit the clinic's psychologists and counsellors. The Student Health Service also works preventively through workshops and discussion groups on stress management, health and study techniques.

Students with disabilities have the opportunity to seek adapted support from Uppsala University's central coordinator. Examples of support that can be given, based on the individual need are support with notes and adapted examination such as extra time, separate writing location or access to a computer. In addition, customised course literature, such as audiobooks, Braille or e-textbooks, individual study plan, escort and sign language or writing interpreter can be provided.

Students also have access to various aids that require no special needs or an application, such as spellcheckers, speech synthesis programs, audio induction loops and language guidance in Swedish and English via the Language Workshop.

Uppsala Student Union works to safeguard the rights of students through measures such as study monitoring, student representation and student influence. Students can contact the Student Union for guidance if they are experiencing problems with the study environment, examinations or other individual matters.

The University Chaplaincy provides meeting places that are open to all students regardless of religious belief, as well as conversational and crisis support, training in communication, group dynamics and conflict management.

In order to draw attention to students who have problems with their studies, the programme has a requirement that the student must have passed at least 37.5 credits in courses from year 1 in order to be able to move on to year 2 (Appendix 7). Although there is no specific notification system in place beyond this, we see that most problems are discovered due to our close and frequent contact with the students. As the student groups are relatively small and programme management maintains ongoing contact with students and course directors throughout the programme, it is possible to identify problems relatively early on.

#### *Freestanding courses*

The physical work environment during these courses is an established workplace, often within the University, but also within different authorities.

#### **Development areas**

- A lack of knowledge of English has sometimes been a problem for students to assimilate their studies and to collaborate with other students. Introducing tougher language requirements for admission to the faculty Master's programme is discussed. We should also continuously remind students of the language support available at the Language Workshop at the beginning of the programme.
- *Freestanding courses*: Inform the students about the support available under section 2.3.

## **2.11 That continuous follow-up and improvement of the study programme is carried out.**

### *Follow-up and development*

An annual development plan for the programme is formulated based on the needs identified during the previous year. The plan is reported to MPK and GRUNK and followed up the next year. We work regularly with alumni surveys, alumni follow-up and interviews to monitor the students' employability. We also follow up on various key measures for student completion, dropouts and applicants per place to maintain a popular, high-quality programme.

### *Course evaluations*

As described in section 2.9, the programme works systematically to follow up course evaluations. Early in the course, formative evaluations are held through spontaneous discussions with the students about how they judge the course's content, workload and scheduling. This provides an opportunity to introduce changes already for the course that raises a problem. A course report is written by the course coordinator at the end of each course and circulated to students via Studium/the Student Portal. The report contains a summary of the students' comments and a description of planned measures and changes. Course directors are asked to make students aware of any changes made to the course as a result of student feedback during course introductions.

While it is recognised that a high response rate to course evaluations is an important part of systematic quality assurance management, this is unfortunately difficult to achieve. This generally applies to the Master's programmes under MPK and actions are discussed. Circulating the results of course evaluations to students is one way to encourage participation, as is keeping course evaluations open throughout the course and sending reminders to students who have not yet responded. We have recently reviewed the content of course evaluations and reduced the number of questions in the hope of increasing response rates. The student representative also suggested that having time scheduled for answering the course evaluation questions might help.

### *Freestanding courses*

The same follow-up routines are performed for these courses as for the entire programme.

### **Development areas**

- Quality work can be discussed to a larger extent with course directors at the annual teacher days.
- According to the current programme evaluation model, planned actions are to be compiled, implemented on a schedule and reported back to the Programme Committee. This will be a tool to strengthen the prioritisation and implementation of possible developments.
- Time devoted for answering the course evaluation could be added to the last lecture on each course. This might promote a higher answering frequency.
- *Freestanding courses*: Discuss possible measures to increase the response rate on course evaluations. Planned actions shall be compiled and followed up according to the current programme evaluation procedure.

## **3. Summary**

The Master's Programme in Forensic Science is a unique programme with high number of applicants per place at Uppsala University. The programme is multidisciplinary and is crossing faculty borders by nature and an intensive cooperation with other University departments and authorities is required in order to obtain this complete and broad programme. Since the



programme includes specialized knowledge in a number of different areas, interprofessional learning is also offered in a natural way. With the help of several teachers and professionals from many different expert areas, the programme provides a broad, and in some subjects also deep knowledge in forensic science. Our ultimate goal is to prepare the students for their future careers with deep and broad knowledge, extensive practical skills as well as a scientific approach and mindset, which will be of great benefit within and outside forensic science.

The programme's management and all teachers have shown great commitment and interest in developing the programme, its content and the pedagogy used in teaching. Many of the teachers also conduct their own research in forensic science or adjacent fields. All this together provides good goal attainment of the learning outcomes for the courses ensures that the programme is based on a scientific foundation. The teachers' competence and breadth contribute largely to student-focused learning and progression in knowledge and skills. Moreover, the program and the University have ongoing work to promote a good study environment, the student influence, gender equality, internationalisation and sustainability.

As part of the educational evaluation and our writing of this self-evaluation, we have been given the opportunity to both obtain both student and employer perspectives on the programme. We have also had internal discussions about the content of the programme, the students' employability, quality assurance and proposals for development areas. Since all aspects and facts about the programme could not be included in this evaluation, we look forward to discuss the programme in more detail during the visit of the assessment team. We have already had a valuable opportunity in this work to reflect on how we believe that an optimal programme in Forensic Science should be structured. Although we have already found some improvements that can be introduced, during this process, we look forward to comments and feedback from the assessment team in order to develop the programme in Forensic Science and our independent courses even more.

## 4. List of appendices

1. Uppsala University's model for review of study programmes
2. Example course evaluations
3. Alumni survey
4. Employer survey questions
5. Compilation of employer interviews
6. Comments from a student on the self-evaluation
7. Programme syllabus
8. Goal attainment matrix
9. Example schedule for the Professional Training (PT) seminar series
10. Example assessment template
11. Communication plan



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# Uppsala University's Model for Review of Study Programmes

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## Guidelines

Approved by the Vice-Chancellor on 25 October 2016

## Guidelines for Uppsala University's Model for Review of Study Programmes

Uppsala University's education is subject to systematic quality assurance and quality enhancement. According to Uppsala University's rules of procedure, each disciplinary domain/faculty board is responsible for the quality of its educational offerings, since they are best qualified to assess how to ensure and enhance the quality in their respective fields. Consequently, Uppsala University's model for review of study programmes (including freestanding courses), allocates responsibility for the design, implementation and follow-up of reviews of study programmes to the relevant disciplinary domain/faculty board. Uppsala University's model consists of two parts: internal annual systematic follow-up of study programmes, and comprehensive external peer review every six years.

The purpose of Uppsala University's reviews of study programmes is to systematically contribute to ensuring and enhancing the quality of Uppsala University's educational offerings. The aim is to promote education of the highest national and international quality.

- All first-, second- and third-cycle (Bachelor's, Master's and PhD) study programmes<sup>1</sup> will be assessed at least once every six years in a review. The disciplinary domain or faculty board decides how to cluster the study programmes into suitable units for evaluation. As far as possible, the study programmes should be analysed in their entirety.
- The review will proceed from the requirements stipulated in the Higher Education Act (1992:1434) and Higher Education Ordinance (1993:100) (Qualifications Ordinance), taking into account the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG), Uppsala University's Mission and Core Values, and programme-specific policy documents. (See the summary box below.) Every review will:
  - be designed to generate the knowledge required to ensure and enhance the quality of the study programme;
  - include a comprehensive assessment of the quality of the study programme – its strengths, weaknesses and areas for improvement;
  - contain an external review by at least two colleagues from one or several higher education institutions, and by at least one colleague from another faculty/disciplinary domain at Uppsala University, in accordance with recognised principles of peer review;
  - allow relevant teachers and students/doctoral students to participate in the planning, implementation and follow-up of the evaluation;
  - include a self-evaluation and other relevant documents as the basis for the assessment;

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<sup>1</sup> 'All study programmes' refers to all existing study programmes at first-cycle level (courses, degree programmes, main fields, subsidiary fields), second-cycle level (courses, degree programmes, main fields) and third-cycle level (subjects, courses), freestanding courses which are not part of any study programme, access programmes, supplementary teacher training programmes and contract education.

If a specific study programme/degree is subject to the Swedish Higher Education Authority's programme evaluations during the six-year cycle, a review within Uppsala University's model has not to be carried through, *but reporting and follow-up of the results will take place in accordance with these guidelines*. In the event that the Swedish Higher Education Authority's evaluation results in the grading 'questionable quality', Uppsala University's internal procedures should be followed. Joint study programmes with other higher education institutions may be evaluated externally according to the agreement between the higher education institutions and within the framework of national requirements, but reporting and follow-up of the results will take place in accordance with these guidelines.

- result in a concluding reviewer report of the study programme's strengths and weaknesses/areas for improvement, together with recommendations;
- result in a brief evaluation report in which those in charge of the study programme summarise the most important conclusions based on self-evaluation and the reviewer report, and present planned measures/improvement actions; the review method should also be described.

**Disciplinary domain or faculty boards are responsible for:**

- compiling and registering a brief evaluation report in accordance with the above and making it available internally at Uppsala University;
- ensuring the evaluation report also contains the board's conclusion, including whether special follow-up is needed;
- making the planned measures and the concluding reviewer report publically available;
- ensuring that measures and improvement actions are initiated and monitored within the framework of annual follow-up;
- ensuring that necessary measures are followed up within one year, and are subsequently followed up until they are completed or until the programme/course is shut down;
- annually compiling and analysing the results and conclusions of the year's reviews of study programmes, including any need for special follow-ups, and reporting on this to the Vice-Chancellor within the framework of ordinary operational planning and operational follow-ups;
- ensuring the results from the year's completed reviews of study programmes are presented by those in charge of the study programmes in question at the annual conference for reviews of study programmes;
- deciding whether reviews of study programmes in specific subject areas can be replaced by other external accreditation (such as EQUIS) where appropriate. However, reporting and follow-up of results are to take place in accordance with these guidelines.

**Every review will cover the following aspects:**

- that the study programmes achieve the objectives of the Higher Education Act and Higher Education Ordinance (Qualifications Ordinance) and programme-specific objectives, i.e., that actual learning outcomes correspond to expected learning outcomes
- that the content and teaching activities are founded on a scientific basis and proven experience
- that teaching focuses on the learning of students/doctoral students
- that the achievement of intended learning outcomes is assessed using appropriate methods, and complying to rule of law, and that progression is ensured
- that staff involved in the study programme possess relevant and up-to-date expertise in the subject matter, that they have pedagogical and/or subject didactic expertise, and that there is sufficient teaching capacity
- that internationalisation, international perspectives and sustainability are promoted
- that a gender equality perspective is integrated into the study programme
- that the study programme meets individuals' and society's needs for learning and professional knowledge and prepares students for future careers
- that students/doctoral students have influence on the planning, implementation and follow-up of the study programme
- that an appropriate study environment is available to all students/doctoral students
- that continuous follow-up and improvement of the study programme is carried out

For an in-depth description of the objectives of first- and second-cycle education in Uppsala University's Mission and Core Values, see the document *Teaching and Learning at Uppsala University*.

Uppsala University's model for review of study programmes is based on the following principles. The model:

- *is decentralised and based on continuous quality enhancement work;*
- *is based on an exploratory approach to evaluations in which external peer review and collegial work forms are natural components;*
- *promotes quality and includes student/doctoral student participation;*
- *is stringent, i.e. able to identify and remedy deficiencies;*
- *is as simple and cost-efficient as possible.*

External review is a well-established form of academic quality assurance, which in this context ensures that the University's programmes are subject to independent review and can be compared with equivalent programmes at other higher education institutions. Internal review by a colleague from another faculty/discipline helps to call into question matters that may be taken for granted in the subject area and enhances the exchange of knowledge and experiences across the University. The annual conference for reviews of study programmes provides an additional opportunity for constructive criticism from other colleagues and students/doctoral students at the University, and for the dissemination of good practice and lessons learned.

The stringency of the system is achieved via requirements for external and internal reviews of all study programmes, disciplinary domain/faculty boards' conclusions and follow-ups of measures, and transparency regarding the results and planned measures. The conference also contributes to the system's stringency. Results and measures are also reported under the framework of the regular operational planning and follow-up process, in the Vice-Chancellor's annual dialogue with the disciplinary domains, and at the annual conference. A university-wide quality report is compiled annually based on the completed reviews and the conference, and is delivered to the Vice-Chancellor.

The model permits meaningful qualitative comparisons, via external and internal peers and the transparent sharing of results.



# Kurt

## Course evaluation for Forensic science and criminalistics (3MG023)

Status	Completed
Created at	2020-09-21
Available	2020-10-02 – 2020-10-23
Client	<u>Sofia Bodare</u> , employed at Course administration
Program	Fristående kurser medfak, Magisterprogram medfak, termin ht20
The course lasts	2020-09-29 – 2020-10-30
Antal svar	0 av 0
Sammanställning	<a href="#">Sammanställning av course evaluation for Forensic science and crimina...</a>
Filtrera sammanställn.	<a href="#">Filtrera sammanställning av course evaluation for Forensic science and crimina...</a>
Enskilda kursvärderingar	<a href="#">Enskilda kursvärderingar för Course evaluation for Forensic science and crimina...</a>
Exportera data	<a href="#">Exportera data från course evaluation for Forensic science and crimina...</a>
Exportera data	<a href="#">Exportera data för statistisk bearbetning från course evaluation for Forensic...</a>
Avslutad	2020-10-23 av <u>Linda Gejke Hjelmstedt</u>
Locked	Yes
Receiver	
Påminnelser	2020-11-08, 2020-11-14
Frågor	<a href="#">Visa alla frågor i Kurt-format</a>

Preview

**Please see the course syllabus [here](#)**

1. Are you satisfied with the course in general?

No - not at  
all

Yes -  
completely



Comments

//

2. What in the course was particularly good?

//

3. What in the course can be improved?

//

4. What is your opinion about the difficulty level of the course?



Too easy



Adequate



Too  
challenging

Comments

//

5. Do you consider that you achieved the learning objectives in the course syllabus?

No - not at  
all



Yes -  
completely



Comments

//

6. Did you get opportunities to be active in the teaching process?

No - not at  
all



Yes ? to a  
large  
extent



Please comment on the student-activating sessions, e.g. lectures, seminars, lab exercises and oral presentations

//

## Lectures

7. How much did the lectures contribute to your learning?

Not at all

Very much



Please comment if you want to give extra credit to one or more teachers, or if any lecture needs improvement

//

### Lab exercise

8. How much did the lab exercise (fingerprints and shoeprints) contribute to your learning?

Not at all

Very much



Please comment on the lab exercise

//

9. Are you satisfied with the instructions for the laboratory exercise?

No - not at  
all

Yes -  
completely



Please comment on the introduction and instructions during the lab

//

### Site visit

10. How much did the site visit to the Nacka CSI unit contribute to your learning?

Not at all

Very much



Comments

//

### Projects

11. How much did the written part of a case and a method contribute to your learning?

Not at all

Very much



○ ○ ○ ○ ○ ○

Comments

//

12. How much did the reviewing of other students' texts about a case and a method contribute to your learning?

Not at all ○ ○ ○ ○ ○ Very much

Comments

//

### Seminar

13. How much did the case method session contribute to your learning?

Not at all ○ ○ ○ ○ ○ Very much

Comments

//

### Structure and communication

14. Are you satisfied with the communication between teachers and students during the course?

No - not at all ○ ○ ○ ○ ○ Yes - completely

Comments

//

15. Are you content with the structure of the course? (E.g. the order of lectures and lab exercises, timing of deadlines, time for self-tuition)

No - not at all ○ ○ ○ ○ ○ Yes - completely

Comments

//

### Exam

16. Did the exam correspond to the course content and the learning outcomes in the course syllabus?

No - not at  
all

Yes -  
completely

☐☐☐☐☐☐

Comments

//

### Study environment

17. During the course, do you feel you have been neglected or treated badly by a teacher, course staff, or fellow student based on your ethnicity, sex, gender identity or expression, sexual orientation, religion or other belief, age or disability (if any)?

☐ Yes

☐ No

If Yes, please describe:

//

### Other

18. Other comments about the course

//

Thank you for your valuable comments!



# Kurt

## Questionnaire for graduates of the Master's programme in Forensic science

Thank you for your valuable comments!

Status	Completed
Created at	2019-10-16
Available	2019-10-17 – 2019-11-10
Client	<u>Sofia Bodare</u> , employed at Administration
Antal svar	71
Sammanställning	<a href="#">Sammanställning av Questionnaire for graduates of the Master's progra...</a>
Filtrera sammanställn.	<a href="#">Filtrera sammanställning av Questionnaire for graduates of the Master's progra...</a>
Enskilda enkäter	<a href="#">Enskilda enkäter för Questionnaire for graduates of the Master's progra...</a>
Exportera data	<a href="#">Exportera data från Questionnaire for graduates of the Master's progra...</a>
Exportera data	<a href="#">Exportera data för statistisk bearbetning från Questionnaire for graduates of...</a>
Avslutad	2019-11-11
Locked	No
Frågor	<a href="#">Visa alla frågor i Kurt-format</a>

Preview

### Background

1. Which degree did you study at Uppsala University?

☐

One-year  
master's

☐

Two-year  
master's

2. What year did you complete this education?

-- Choose alternative --

3. At what higher-education institution did you mainly study for your bachelor's degree?

☐

At Uppsala University

☐ At another univeristy in Sweden

☐ At a university outside of Sweden, namely in

//

4. Did you move to Sweden from another country specifically to pursue your master's studies?



Yes



No

Comment

//

5. Did you work between your bachelor's degree and starting your master's studies at UU? (Do not count summer/holiday jobs)

☐ Yes, mainly with work requiring higher education

☐ Yes, mainly with work not requiring higher education

☐ No

If yes, please specify:

//

6. Have you considered applying for a doctoral programme/ PhD position?

☐ I have completed my licentiate/doctorate education

☐ I'm studying for a doctoral degree

☐ I plan to apply

☐ I have had plans but never applied

☐ I have been a doctoral student but quit my studies

☐ I applied but was not admitted

☐ No

### Your entry into the job market

7. After how many months did you get your first job (including PhD studies) after completing your master's programme?



I was on leave  
from my job  
during my  
studies and  
returned to the



I found a job  
before I  
completed my  
programme



Less than 6  
months



6-12 months



More than 12  
months



I haven't  
found a job  
yet (go to  
question 12)

same  
employer  
afterwards

8. Do you still have your first job after you finished your master's degree?

- ☐ Yes  
☐ No

9. If no, for how long were you employed at your first job?

- ☐ 6 months or less  
☐ 7-12 months  
☐ 1-3 years  
☐ more than 3 years

10. To what extent does/did your first job relate to the subject area for your master's degree?

- ☐ The work is/was entirely or largely within the subject area  
☐ The work is/was to some extent within the subject area  
☐ The work is/was in another subject area

11. To what extent have the following elements helped you get your first job? If you lack experience in any of the elements, please mark "No exp".

	To a large extent	To some extent	Not at all	No exp.
a. My thesis/degree project	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Internship/traineeship within programme	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Studies abroad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Mentor/alumni contacts during studies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Job market days or similar at the university	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Contact with researchers/teachers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Contact with companies/study visits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Contact with career advisors at the university	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Employment during the studies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Other previous work experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Engagement in committee or student union activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

1. other:

☐☐☐☐

## Current employment

12. What is your current main employment/activity?

- ☐ Permanently employed
- ☐ Limited-term employment
- ☐ Own company
- ☐ Doctoral student
- ☐ Studying at higher-education institution (not doctoral programme) - go to question 23
- ☐ Looking for a job - go to question 23
- ☐ Other, namely:

13. In your current employment, do you have managerial responsibilities for leading and allocating the work of others?

- ☐ No
- ☐ Yes for 6-10 individuals
- ☐ Yes for 1-5 individuals
- ☐ Yes for more than 10 individuals

14. To what extent does your current work relate to the subject area for your master's degree?

- ☐ The work is entirely or largely within the subject area
- ☐ The work is to some extent within the subject area
- ☐ The work is in another subject area

15. In what sector are you currently working?

- ☐ Academic research
- ☐ Private sector/company
- ☐ Public sector (e.g state, municipal, county)
- ☐ Non-profit organisation
- ☐ International authority/organisation
- ☐ Other, namely:

16. In which country are you working?

- ☐ Sweden

☐ Other country, namely:

17. Name of employer/Research Institute/university (optional). If you would like to provide information, to the University and current students, about where the alumni from your master programme may work, please state here who your employer is today.

18. What is your position/professional title today?

19. Please describe your main work tasks:

//

20. How much is your monthly income before tax in your current job? (count up to full-time salary, count supplement for inconvenient hours, \$=USD)

- ☐ Less than 20000 kr/month (less than 2030\$/month)
- ☐ 20000-30000 kr/month (2031-3050 \$/month)
- ☐ 30000-40000 kr/month (3051-4060 \$/month)
- ☐ 40000-50000 kr/month (4061-5080 \$/month)
- ☐ More than 50000 kr/month (more than 5080\$/month)

21. To what extent does your current job require skills and knowledge in the following areas:

	To a large extent	To some extent	To a small extent	Not at all
a. Independently solve problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Make critical analyses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Argue and persuade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Explain to non-specialists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Make written presentations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Make oral presentations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Communicate in English	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Make ethical judgements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Consider international/global perspectives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Work in teams/collaborations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Keep up with developments in the field of your education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- |  |                       |                       |                       |                       |
|--|-----------------------|-----------------------|-----------------------|-----------------------|
| l. Apply scientific methods                                | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| m. Read and understand academic texts                      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| n. Carry out advanced assignments within given time frames | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| o. Identify and formulate problems                         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| p. Identify and remedy your own knowledge gaps             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| q. Broad knowledge of the subject area of your master's    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| r. In-depth knowledge of the subject area of your master's | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| s. In-depth insights into current R&D work                 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| t. other: <input type="text"/>                             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

22. Comments

//

### Your Master's Programme

23. How satisfied are you with the quality of your master's programme?

- |                       |                       |                               |                       |                       |
|-----------------------|-----------------------|-------------------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/>         | <input type="radio"/> | <input type="radio"/> |
| Very satisfied        | Rather satisfied      | Not satisfied or dissatisfied | Rather dissatisfied   | Very dissatisfied     |

24. Where was the emphasis placed in your master's programme in terms of the theoretical and applied/practical knowledge, respectively?

- |  |                       |                       |                       |                       |
|--|-----------------------|-----------------------|-----------------------|-----------------------|
|  | To a large extent     | To some extent        | To a small extent     | Not at all            |
| a. Emphasis on theoretical knowledge       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b. Emphasis on practical/applied knowledge | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

25. How satisfied are you with the balance in the programme's theoretical vs. applied/practical focus?

- |                       |                       |                               |                       |                       |
|-----------------------|-----------------------|-------------------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/>         | <input type="radio"/> | <input type="radio"/> |
| Very satisfied        | Rather satisfied      | Not satisfied or dissatisfied | Rather dissatisfied   | Very dissatisfied     |

26. To what extent did the master's programme contribute to the development of your skills and knowledge in the following areas:



	To a large extent	To some extent	To a small extent	Not at all
a. Independently solve problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Make critical analyses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Argue and persuade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Explain to non-specialists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Make written presentations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Make oral presentations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Communicate in English	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Make ethical judgements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Consider international/global perspectives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Work in teams/collaborations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Keep up with developments in the field of your education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
l. apply scientific methods	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
m. Read and understand academic texts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
n. Carry out advanced assignments within given time frames	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
o. Identify and formulate problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
p. Identify and remedy your own knowledge gaps	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
q. Broad knowledge of the subject area of your master's	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
r. In-depth knowledge of the subject area of your master's	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
s. In depth insights into current R&D	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
t. Contact with private sector/companies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
u. Other:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

27. How did you perceive the demands of your master's programme in comparison with your previous studies at the bachelor's level in terms of:

	Higher demands in master's	Largely the same demands	Lower demands in master's
a. Independence/own responsibility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Deeper insights and understanding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Degree of difficulty of studies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Workload during studies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

28. Your programme had an internationally mixed group of students. Did this experience help you in your career?

☐

yes

☐

no

29. Comments

//

30. Would you recommend others to take your master's programme?

- ☐ Yes
- ☐ No
- ☐ Don't know

Describe the strengths and weaknesses of your master's programme:

31. Strengths

//

32. Weaknesses

//

Thank you for participating!

## Questions for employer interviews

### Master's programme in Forensics science

#### BACKGROUND INFORMATION

1. Your company/authority and unit/department
2. What is the main task of your unit/department?
3. Your title/position
4. What occupational categories are there in your unit/department?
5. How many employees are there in your unit/department? On the whole company/authority?
6. How many recent graduates (all study backgrounds) have been employed in the last two years?

#### INTERVIEW QUESTIONS

1. What is required of newly graduated persons (all study backgrounds) at your workplace, in terms of
  - a. Subject knowledge (*eg in forensic science, other academic fields, chemistry, biology, ethics, criminology*)
  - b. General abilities (*eg problem solving, communication, ability to collaborate, ability to perform and evaluate science*)
  - c. Forms of work (*eg administration/handling, laboratory work, keeping schedule*)
2. Do students need additional knowledge from the education in forensic science, in terms of
  - a. Any theoretical subject
  - b. Practical training
  - c. Training in general abilities
3. Which of the following is very important when you employ relatively recent graduates (all study backgrounds)? Answer yes or no
  - a. The focus of the degree project
  - b. The degree project is carried out at your unit / department
  - c. Study abroad
  - d. Education in forensic science
  - e. Other education (eg criminology, police training, behavioral science, etc.)
  - f. Work experience in forensic activities
  - g. Other work experience
  - h. References from previous employers
  - i. Contacts
  - j. Good language skills, indicate which language (s): \_\_\_\_\_
  - k. Social competence
  - l. Professional approach (eg commitment, drive, problem-solving ability, ability to self-critique and openness to new ideas)
4. Which occupational groups do the employees communicate and collaborate with most in their work with you? What forms of communication occur (eg oral presentations and written reports)?

5. How well does communication/collaboration work with other professions that alumni in forensic science work closely with? Rate your answer on a scale from 1 to 10, where 1 is not good at all and 10 is very good.

- a) Communication
- b) Cooperation

6. How would you rate the forensic science alumni's skills in independent work and problem-solving? Rate your answer on a scale from 1 to 10, where 1 is not good at all and 10 is very good.

- a) Independent work
- b) Problem-solving

7. How satisfied are you overall with your recruitment(s) of alumni in forensic science on a scale from 1 to 10, where 1 is not at all satisfied and 10 is very satisfied?

8. With what other related professions/professional groups do forensic science alumni compete for employment?

9. How good recruitments are alumni in forensic science in general, in competition with other professions in working life? Rate your answer on a scale from 1 to 10, where 1 is not good at all and 10 is very good.

- a) At the time of employment
- b) Later, after 2 to 3 years of employment

10. Do you think that relatively newly graduated alumni in forensic science have strengths compared to related professions? Rate your answer on a scale from 1 to 10, where 1 is not at all and 10 is very much.

- a) Can you give examples of these strengths?
- b) Can you give examples of any weaknesses?

11. What can be improved in the master's program to increase the opportunity for work with you?

12. a) For what positions do you employ alumni in forensic science today?

b) Will there be other (more) types of positions for alumni in forensic science in 5 to 10 years' time? Other occupational categories/areas?

13. Is there anything else you want to add or tell us about?

	The Police authority Uppsala	National Forensic Centre (NFC) Örebro	Uppsala Genome Center	Karolinska Institute (KI)/Region Stockholm	Police Region Stockholm (2 persons)	National Forensic Centre (NFC), Linköping	NFC West	Police Region Stockholm
<b>BACKGROUND INFO</b>								
<b>1. Your company/authority and unit/department</b>	The Police authority Region Mid, forensic section	NFC Örebro	SciLifeLab, Uppsala Genome Center	Clinical pharmacology	Police authority Region Stockholm, forensic section	NFC Linköping, fingerprint unit	NFC West	Police Region Stockholm
<b>2. What is the main task of your unit/department?</b>	Crime scene investigations in serious crimes. Shoe prints, which is unique to Uppsala. Not much laboratory work anymore since NFC took over, but sometimes evidence is taken "home" for analysis (shoes, clothes, weapons).	Fingerprint development, securing biological traces.	Support research with sequencing, project advice and the provide advanced equipment.	Three labs: doping lab, substance abuse and drugs. Teaching pharmacology for healthcare professions. Adverse reaction reporting. Research within KI.	Crime scene investigation 80%, subsequent work with protocols 20%. Also a logistics department for handling forensic evidence. A forensic station is available as a link to investigators and to make an initial assessment of what evidence is worth analysing.	Work with criminal cases, fingerprints	Receive and examine items from more serious crimes. For example fingerprints, weapons and evidence in rape cases.	Forensic investigations in serious crimes. For example fingerprints, shoe prints, DNA, etc. Some laboratory analyses "in house" such as clothes.
<b>3. Your title/position</b>	Group leader	Group leader, forensic scientist	Head of facility, operative manager	Adjunct Professor, docent	Person 1: strategic forensic coordinator (included in the management team). Person 2: Section leader, police.	Group leader	Section manager	Group leader, acting section manager and quality coordinator
<b>4. What occupational categories are there in your unit/department?</b>	Mostly police officers, a civilian graduate from the Forensic science programme.	Lab staff (mostly with background in natural science), biomedical analysts, chemists, biologists	Project manager, bioinformatics, project coordinators, research engineers	Laboratory technicians, biomedical analysts, physicians	Forensic scientists (mostly police officers but also civilians), officers at the forensic station, trainers, administrators, ammunition managers, group leaders. Forensic technicians may have increased ability/specialization.	Chemists, biologists, lab assistants, criminologists, physicists, linguists. They all work with the same tasks.	Civilians of various backgrounds (mostly biomedical analysts), a few police officers	Mostly forensic scientists, including forensic administrators, laboratory forensic scientists, specialists, planners and assistants.
<b>5. How many employees are there in your unit/department?</b>	13	9	17	KI approx 15, doping lab approx 25. In total approx 80.	116	11	50	116
<b>On the whole company/authority?</b>	90 within the region (forensics)	650 within NFC Sweden	Don't know	Don't know	32000 within the Police authority Sweden	300-400 at NFC Linköping and 650 in total in Sweden	650 within NFC Sweden	32 000 within the Swedish Police Authority
<b>6. How many recent graduates (all study backgrounds) have been employed in the last two years?</b>	2	0, but have hired before	0 (low turnover, only 1 new hire in recent years)	10-15	40 new employees, however, not all are recent graduates	0	2-3	4-5 (about a third of the recruitments)
<b>INTERVIEW QUESTIONS</b>								
<b>1. What is required of newly graduated persons (all study backgrounds) at your workplace, in terms of</b>								
<b>a) Subject knowledge</b>	Forensic science. Also criminology if you want to work as a forensic administrator.	1st hand master in forensic science, 2nd hand master in chemistry, 3rd hand biomedical analyst or biologist. Criminology is a plus. Extensive in-house training is given regardless of background.	Molecular genetics important. Interest in or experience with advanced equipment is good. Good to have an overview of bioinformatics (but not crucial to be a research engineer).	1st hand chemistry, 2nd hand biology	Depends on function. Forensic scientists and forensic administrators need forensic science, but we have a fairly open set of requirements so as not to lose talented candidates.	Master's degree, main field of study may vary	Broad recruitment, 2-3 years of education within natural science is enough to become a forensic laboratory technician. To become a forensic scientist, you need at least 4 years of education.	Forensic science is important. Criminology can be good but not as the sole background. Chemistry is good depending on position.
<b>b) General abilities</b>	Critical thinking, being able to be objective, interpret and draw conclusions. Humility. Communication. Seek knowledge internally in the workplace and externally.	Independence (being able to make decisions) and drive. It can be challenging coming here as a new employee from the academic world and it is important with all general abilities in the examples.	Ability to cooperate is very important. Service-oriented, communicative and problem-solving ability (adaptation of methods and troubleshooting of devices and results).	For lab staff/biomedical analysts mainly collaboration skills and communication. Among the lab staff, some are recruited for doctoral positions (for them, scientific approach is important).	In principle, all examples are included in the requirements in job advertisements. Also analytical ability and patience. Swedish citizenship is a requirement.	Detail vision (test done before interview), cooperation, accuracy, ability to perform repetitive work	Personal qualities are most important. Good detail vision (pattern recognition tests are done in the recruitment process).	Analytical ability (being able to draw conclusions) and attention to detail are most important. Must be stable as a person due to the cases handled.
<b>c) Forms of work</b>	Administrative work and documentation. Certain laboratory work. Sometimes time requirements.	Administration, ability to write detailed but concise protocols.	Lab work, instinctive feel for their work tasks.	Lab work	It is important to be able to work flexibly, i.e. be able to prioritize/re-prioritize between cases that come in. Efficiency - follow best practice and be careful but at the same time "good enough" to be able to handle the flow of cases. Administrative work in different systems. Securing, handling and analysis of traces.	Repetitive work	Administration, lab work, report writing.	Experience of governmental work is good (eg RMV). You must be able to work in a structured and broad manner with varying tasks.
<b>2. Do students need additional knowledge from the education in forensic science, in terms of</b>								
<b>a) Any theoretical subject</b>	No, you get in-house training.	Fingerprint knowledge. Other subjects such as forensic genetics and analytical chemistry/toxicology are not so necessary with us.	No (though hard to say because the alumni have been in the workplace longer than me and are very good)	No particular shortcoming, possibly writing (one person)	More law and criminal law. Also knowledge about other countries' legal systems and the relationship of EU law to national legislation (eg coercive measures and exchange of information).	No, in-house training is provided	No, in-house training is provided	More insight into police activities would be good, e.g. how preliminary investigations are conducted. Also bias.
<b>b) Practical training</b>	Assessment of details, e.g. footprints and fingerprints.	The craft of developing fingerprints on various materials and securing biological traces.	No	No, they are good and independent	Fingerprints and traces at a more advanced level. If it were feasible, perhaps crime scene exercises in collaboration with us.	No	No	Photography
<b>c) Training in general abilities</b>	No (academics are used to formulating themselves in writing)	No, you get to learn what you need here.	No	No, it is more on an individual basis	No	No	No	No, it's more individual.
<b>3. Which of the following is very important when you employ relatively recent graduates (all study backgrounds)?</b>								
<b>a) The focus of the degree project</b>	No, can be but not always. Interest is more important.	Yes, sometimes	No	Yes	Yes, but not crucial	No	Yes	Yes, it supports the applicant's interest but is not decisive.
<b>b) The degree project is carried out at your unit/department</b>	No	No, not required but a plus	No	Yes, it's an advantage	Yes, if you have done a good job	No	No	No
<b>c) Studies abroad</b>	No	No	No	No	No, not in general but may be relevant depending on position	No	No, but meritorious	No, but meritorious if the subject is relevant
<b>d) Education in forensic science</b>	Yes	Yes	No	No	Yes	No	Yes	Yes
<b>e) Other education (eg criminology, police training, behavioral science, etc.)</b>	Yes, police training and behavioral science	Yes, criminology and behavioral science	No	Biomedical laboratory science	Yes, meritorious. Police training is required for certain positions.	No	Yes, police training	Yes, archeology and osteology (better than police training).
<b>f) Work experience within forensics</b>	No, good but not necessary	Yes	No	No	Yes	No, but meritorious	Yes	Yes
<b>g) Other work experience</b>	Yes, very important for personal development and maturity	Yes, to some extent	No, you get to learn here	Yes, it's an advantage	Yes, we have a broad mission, e.g. contact with the public and service	No	Yes, from lab work	Yes, if it's related to forensics/lab/archeology.
<b>h) References from previous employers</b>	Yes	Yes	Yes, some form of reference from an employer or degree project	Yes	Yes	Yes, from employment or studies	Yes	Yes, in the final step of the recruitment process
<b>i) Contacts</b>	No	No	No	No	No, it is not an objective basis for employment but relevant info can come via contacts	No	No	No, but it is a plus if a knowledgeable person in the field recommends someone.
<b>j) Good language skills, indicate which language(s)</b>	Swedish required, English good	Swedish and English	English	Swedish and/or English	Swedish and English required. All languages are a merit.	Swedish or English	Swedish is required	Swedish
<b>k) Social skills</b>	Yes	Yes	Yes	No	Yes	Yes	Yes, very important	Yes, if two applicants have equal merits
<b>l) Professional approach (eg commitment, drive, problem-solving ability, ability to self-critique and openness to new ideas)</b>	Yes, all of them	Yes, all of them	Yes, all of them	No, not for clinical work	Yes, it belongs to the core values of the police	Yes	Yes, very important	Yes
<b>4. a) Which occupational groups do the employees communicate and collaborate with most in their work with you?</b>								
	Police officers, prosecutors, forensic scientists and laboratory technicians at NFC.	Police officers, lawyers, staff within NFC and RMV	Researchers	Chemists, biomedical analysts, physicians	Prosecutors, preliminary investigators, NFC, RMV, specialist doctors for sexual crimes at the hospital, national bomb protection.	Forensic scientists, police officers, investigators, prosecutors, lawyers.	Police investigators, prosecutors, forensic technicians, crime scene investigators, forensic scientists elsewhere.	Police investigators and forensic scientists/laboratory technicians at NFC.
<b>b) What forms of communication are there (eg oral presentations and written reports)?</b>	Oral presentations and written reports	Meetings, oral presentations and written protocols with statements	E-mail	Evaluation of test results (discussions), written reports, oral presentations, research meetings, ethics applications	Meetings, reports and statements, e-mail, telephone, the police communication system Rakel.	Telephone, e-mail, written expert opinions.	Write reports, e-mail, telephone	Write reports, e-mail, telephone

5. How well does communication/collaboration work with other professions that alumni in forensic science work closely with? Rate your answer on a scale from 1 to 10, where 1 is not good at all and 10 is very good.		Relationships between police officers and civilians can be difficult but we see a tendency towards the better. Ability to communicate and collaborate overall is individual.						
a) Communication	8	8	10	9	8	Don't know	8	8
b) Cooperation	8	8	10	9	8	Don't know	8	8
6. How would you rate the forensic science alumnis' skills in independent work and problem-solving? Rate your answer on a scale from 1 to 10, where 1 is not good at all and 10 is very good.		It can feel very new/unusual to enter the police world as an academic. The alumni manage it very well overall, but it does not suit everyone.						
a) Independent work	8	7	10	9	9	10	8	7-8 (individual, some 5)
b) Problem-solving	8	7	10	9	9	10	8	7-8 (individual, some 5)
7. How satisfied are you overall with your recruitment(s) of alumni in forensic science on a scale from 1 to 10, where 1 is not at all satisfied and 10 is very satisfied?	10	10 on all but one, who is a 9	10	10	8	9	10	8-9
8. With what other related professions/professional groups do forensic science alumni compete for employment?	Police officers	Especially biomedical analysts, many applicants have that background. To some extent chemists, biologists and civil engineers in biotechnology.	Students from other master's programmes, e.g. biomedicine, engineers, chemistry, biology, infectious biology.	Toxicology from KI, analytical chemistry from Stockholm University	Forensic technician: competition with police officers. Forensic administrators: competition with civilian investigators and administrators from authorities (eg the Swedish Social Insurance Agency, Försäkringskassan). Even people with general abilities, e.g. archaeologists.	Anyone with a master's degree or police training	Mostly biomedical analysts, but virtually anyone can apply for a job with us.	Archaeologists and osteologists. Police officers do not compete much for the same positions.
9. How good recruitments are alumni in forensic science in general, in competition with other professions in working life? Rate your answer on a scale from 1 to 10, where 1 is not good at all and 10 is very good.								
a) At the time of employment	6	7	Don't know	9	5 (it is challenging to be new here but the alumni are as good as others)	5 (as good as others)	8	Individual, overall 5 (equally good). Some 6-7 if they have the right attitude.
b) Later, after 2 to 3 years of employment	8	7	Don't know	9	7	5 (as good as others)	5 (as good as others, the differences are evened out and personal qualities become more important)	5 (equally good)
10. Do you think that relatively newly graduated alumni in forensic science have strengths compared to related professions? Rate your answer on a scale from 1 to 10, where 1 is not at all and 10 is very much.	8	7	7	9	7	6	7	5 (equally good), some even better
a) Can you give examples of these strengths?	Broad competence (knows a little about a lot), has a holistic perspective on forensic work, easy to specialize.	They have an awareness of forensic work, a good overall picture.	Being meticulous	High level in general (perhaps due to higher admission requirements than other programmes), independence, self-confidence	Critical thinking, analytical ability, focus, drive.	An overview of forensics, international perspectives on their work (eg used to attend conferences)	Knowledge of DNA, contamination, different methods for lifting fingerprints.	Have a general awareness of forensic work.
b) Can you give examples of any weaknesses?	None	It is difficult to switch from the university bubble to the police world. A transition from structured and logical work to "this is what we have always done".	Don't know	No, nothing in general, it's different from person to person	Critical thinking can sometimes be too much. They may have ideas and questions about methods but changes are slow to implement here. Do not fully understand the police's working methods and framework. General weakness for the programme if too high a proportion of students are international (due to citizenship requirements for employment).	Nothing in particular	Are not always aware that it is about routine work and production (where biomedical analysts are more accustomed).	Can sometimes overestimate their ability and lose humility for the fact that there is a lot to learn.
11. What can be improved in the master's program to increase the opportunity for work with you?	Nothing special, the training is sufficient. However, there is competition with police officers for employment.	Opportunity to specialize e.g. in securing biological traces and fingerprint development and how to adapt the techniques to different types of materials. The in-house training with us takes 6-12 months, but could be shortened by 4 months if you have the right prior knowledge.	More bioinformatics and data handling	Some more chemistry (analytical spectrometry)	Increased understanding of government assignments, the legal process, law/criminal law and the culture and rules of procedure within the police. Practical experience of crime scene investigations.	Nothing in particular, we have broad recruitment	Knowledge of the latest types of technologies would be rewarding for us (however, it is not always easy to adjust our methods). IT forensics.	More knowledge about the police. But the alumni already rank high.
12. a) For what positions do you employ alumni in forensic science today?	Shoe trace investigators	Forensic laboratory technician	Research engineer	Hospital chemists, with the possibility of a doctoral student position if appropriate	Forensic scientists and forensic administrators	Forensic scientists and lab technicians	Forensic laboratory technicians and forensic scientists. After many years of experience, there is the opportunity to become a generalist/crime scene coordinator who works with major crime cases.	Forensic administrators (with some laboratory work) and forensic technicians.
b) Will there be other (more) types of positions for alumni in forensic science in 5 to 10 years' time? Other occupational categories/areas?	Forensic technicians, possibly in weapons. Depends on how the activities within the police develop in relation to NFC.	We strive for forensic laboratory technician to be an entry level in the future and that you then advance to become a forensic scientist (takes about 2 years of training). We want to be able to offer career opportunities so as not to lose talented employees.	Don't think so	In doping, more genetic and biological competence may be needed in the long run. Analytical chemistry will always be needed.	The authority may move towards more specialist functions in the future, e.g. in trace analysis and weapons. Group leader is a possible career path for alumni.	No, rather the opposite as the educational requirements may be eased in the future.	Technical evidence is becoming increasingly important so the need will always be there. IT forensics is growing and it is difficult to recruit the right skills.	Forensic analysis teams.
13. Is there anything else you want to add or tell us about?	NFC will announce more positions for laboratory technicians in the future. It is good that we get thesis workers from the forensic science programme who work with projects we are interested in.	Good to know for students: It is very advantageous to get an edge (eg from the elective period). You must pass a pattern recognition test to work with fingerprints. Swedish citizenship is also required - therefore a pity if international students do not know about it and also a pity if too large a proportion of students in the program are foreign. The work in Linköping and Örebro is very different. Routine work in Linköping, in Örebro more focus on quality, troubleshooting and independent analysis.	No	Nothing special, I have good experiences of the alumni.	We would be happy to collaborate more. For example a lecture on culture and working methods in the police or a crime scene exercise. It can be useful both as a merit for students who choose a career in forensics, but also for students at an early stage to be able to decide if the area suits them.	Swedish citizenship is no longer a requirement with us but it has changed back and forth.	IT forensics is a highly sought-after skill.	From our point of view, more focus in the education on Swedish conditions would be good.

# **Self-evaluation of the master's program in Forensic Science at Uppsala University**

## **Comments from a newly graduated student**

The 11 quality aspects

### **2.1**

Clear strengths are above all that the course content and the order of which courses are given really provide both broad and deep knowledge. As a student, it was good to start wider and get a more general picture of the subject, to later delve into more specific areas and gradually advance in learning. Another strength is the opportunity to be able to do a 45 credit degree project. This contributes to increased cutting-edge competence and in-depth knowledge of both theory and practical laboratory work. Something that is a little less good is that although it is the intention that the students should receive written feedback on laboratory reports, this has varied depending on which course and teacher is in charge of or corrects the laboratory report. For some labs you only find out if you are approved or not, without written feedback (which is a shame as you learn a lot from it).

Suggestion: Regarding Appendix 6 with matrix for goal fulfillment, the penultimate line for "Case studies", also tick the course "Law, psychology and forensic expertise". This is because throughout the course we went through a specific case in great detail. If you think back on which courses that involved case work, it is the course that first comes to mind.

### **2.2**

It is positive that the education is interdisciplinary and is in close contact with the research environment in many different areas. The teaching is also well connected to current research with a lot of focus on how to work in the forensic field today (current techniques, instruments, research, etc.).

Professional training (PT) is for many students a very important and educational seminar series. I want to say that what is taught during PT is knowledge you can not be without to complete your master in a good way. On the other hand, I think it is a disadvantage that PT is kept in such a large group of students as many become uninvolved. The seminars where the students actually became directly involved (eg being asked to contribute by voting on various issues with their telephone) meant that more people could absorb the important information. Since it may not be possible to do PT in small groups, a suggestion for improvement is to ask the lecturers to design seminars where the students are more actively involved.

### **2.3**

The students' responsibilities and rights are explained in a good way both during PT sessions and at the start of each individual course. Recruitment is broadened where students have different backgrounds, different ethnic backgrounds, etc. As a student, you have learned a lot from this mix of classmates. The uneven gender distribution is quite noticeable but difficult to correct. Furthermore,

it is true that the program is applied for because there is a specific interest in forensic science. Almost all the students in my year group had a genuine interest in the subject and had applied for the program because of it. Something that was extra good in combination with this, were the so-called activity days we had in the course "Forensic Science and Criminalistics" where we were asked what we were particularly interested in and if possible, wanted to include in the course. This was greatly appreciated.

As for laboratory work, I can confirm that it is much more rewarding and activating to work in small groups. As a consequence of covid-19, this was especially evident when the laboratory groups were kept apart in different rooms, so each small group had to focus entirely on their own work. Distance learning gradually got better and better as students and lecturers learned to handle zoom and other technical aids. I agree with the three suggested development areas.

## **2.4**

It is good that the exams are varied and they feel well adapted to each learning goal. Progression in both the theoretical and the practical laboratory work feels well balanced, where further into the programme you get a chance to perform more demanding tasks. Extra clear for this is precisely the problem you get during semester 3 in "Analytical methods in forensic science". The task may feel difficult at first, but once you start the work, you realize that you have already learned a lot and can complete the task together. Incredibly instructive moment.

As far as plagiarism is concerned, I as a student have observed that there are clear differences in opinion and understanding of what is considered plagiarism depending on which country you come from and where you have studied before. There are several students who, for example, have never encountered a plagiarism program like Urkund before. So a suggestion is that at the mandatory seminar where you go through this, really point out and show clear examples. Perhaps you can remind students of this several times before major assignments / home exams.

## **2.5**

In general, all lecturers have been pedagogical with good cutting-edge competence in their specific area. During physical lectures on campus, this has been shown extra clearly as the students can directly ask questions to the lecturer who easily answers all questions and is more than willing to tell more. However, it could sometimes be difficult to get feedback on questions that appeared days later after the lecture. Furthermore, I think it is very good that a lab coordinator has been recruited, because sometimes it could be experienced that the knowledge varied among the doctoral students who had been assigned to teach / supervise laboratory work.

## **2.6**

A strength of the program is precisely all the international experiences you get as a student. This can be challenging at first, which is why it is extra good that the PT seminar "Cultural intelligence" has been added so early. Furthermore, it is very rewarding to be a student to take part in a more global perspective in the forensic area and thus see the differences and similarities that exist. This makes it easier to work or study further in another country. When it comes to sustainable development, it feels as if you as a student have not had much focus on this, probably because it is not part of the



course objectives. Links between forensics and sustainable development could be discussed more, perhaps during a so-called flipped classroom.

## **2.7**

The work for equal conditions and against discrimination is clearly noticeable. Good information is provided and the PT seminar further clarifies. To give an example, one of the students in my year became a mother. Despite this, she was able to directly continue her studies by, for example, taking the child to lectures. It is also an advantage to ask a question about someone who has experienced some form of discrimination in the anonymous course evaluations. However, due to that many students do not respond to the course evaluations, something may be overlooked. It would be good if you could get more students to answer these questions after each course.

## **2.8**

It is clear that the program has been adapted to be as relevant to the labor market as possible. As many teachers / lecturers come directly from the police, NFC and RMV, everything you learn feels both current and specifically designed to give us the knowledge that best prepares for future career choices and work. Several students from my year group have planned to apply for professions within the police and NFC in different parts of Sweden. Furthermore, to give an example, I myself have been in contact with NFC in Gothenburg where they are very interested in recruiting individuals with the education we have received. It was especially interesting and meritorious with knowledge of fingerprints, DNA analyses, weapons and general knowledge of forensic technology, which were all included in the education.

A disadvantage could be that you do not have time to go through topics like these in depth and the labs you get to take part in is something you may never have done before and only get to test at once. This means that you probably need to be introduced to the techniques again once you start working after your studies. With this in mind, it is extra good that a longer degree project of 45 credits is offered. This so you really get time to go through a subject / area thoroughly and really learn theory, methods, technology and instruments to take with you once you have completed the programme.

Another good way to prepare students for a future working life is to continue to invite former students who work in different areas and can tell about the profession. This was done for our year group and was very appreciated and inspiring.

## **2.9**

It is good that at least two student representatives from each cohort represent the entire programme. Unfortunately, the majority of students are often uninterested in engaging in issues such as these, which makes it difficult to find representatives or get the rest of the class to contribute with their opinions. It is therefore extra important to continue to elect at least two student representatives so that the students' influence is not reduced.

As for the course report, all course leaders at the course introduction went through what was good, less good and what has changed from previous years. However, it is less common for the new course report to be sent out by e-mail to students after completing the course. Suggestions for a higher response rate: Clarify early on how important and above all why it is important for students to answer the questions. At another university in Sweden, they have used scheduled time to fill in the course evaluation, which worked very well. Furthermore, try to notify when the course report is compiled and where the students can find it. I think that by making the compilation more accessible, it would contribute to more students wanting to respond to the next course report. Maybe you can share how many people participated as a percentage to clarify further.

## **2.10**

The study environment is very good and it is extra good that group rooms and lunch rooms are available around the clock. Before covid-19, we were several students who sat together and worked until late in the evenings. This is especially good when the housing situation may not be so optimal for studying from home. Furthermore, I completely agree that any problems that arise are detected early. This is because we are a relatively small class that, both academically and privately, becomes quite close between each other and the programme management.

English skills vary greatly from student to student and may initially be a problem. It can be good to remind students more often about the language support that is also further into the programme.

## **2.11**

Development of the education was seen as a student especially clearly in that you could choose to do a degree project with 45 credits instead of 30 credits, which was very positive.

As for the response rate to the course evaluations, I do not think it is the actual number of questions that is the problem, but the problem lies in getting the students to open up at all and start answering questions. I think, as mentioned before, to get more people to answer, you need to add a mandatory element to the schedule to answer the course evaluation (about 10-15 minutes). This could, for example, be added to the last lecture / question time before the examination. It is also important to really ensure feedback to the students with the result. Otherwise, there can be a frustrating feeling that you are constantly evaluating different things but do not get a response back on how the result actually turned out.



# Master's Programme in Forensic Science

**120.0 credits**

**Programme Code:** MFV2M

**Established:** 2008-03-31

**Established by:** Programkommittén för biomedicinarprogrammet

**Revised:** 2021-06-01

**Revised by:** The Educational Board of Medicine

**Reg. No.:** MEDFARM 2021/566

**Syllabus applies from:** Autumn 2022

**Responsible Faculty:** Faculty of Medicine

**Responsible Department:** Department of Immunology, Genetics and Pathology

## Entry Requirements

### Academic requirements

A Bachelor's degree, equivalent to a Swedish Kandidatexamen, from an internationally recognised university. The main field of study must be in molecular biology, biomedicine, chemistry, biology, or a similar field of study that includes at least 15 credits in chemistry and/or biochemistry as well as 15 credits in cell biology, molecular biology and/or genetics. Also required is knowledge and practical experience of laboratory experiments in life sciences.

### Language requirements

All applicants need to verify English language proficiency that corresponds to English studies at upper secondary (high school) level in Sweden ("English 6"). This can be done in a number of ways, including through an internationally recognised test such as TOEFL or IELTS, or through previous upper secondary (high school) or university studies.

The minimum test scores are:

- IELTS: an overall mark of 6.5 and no section below 5.5
- TOEFL: Paper-based: Score of 4.5 (scale 1–6) in written test and a total score of 575. Internet-based: Score of 20 (scale 0–30) in written test and a total score of 90
- Cambridge: CAE, CPE

[More information about English language requirements](#)

## Decisions and Guidelines

The programme syllabus was adopted by the Disciplinary Domain of Medicine and Pharmacy on 2018-04-24. The general goals for second-cycle higher education in the Higher Education Act (Chapter 1 Section 9) apply.

## Aim

After completing the programme a student can receive the degree of Master of Science (120 credits). The main field of study is forensic science.

The Master's programme should give skills and competences for qualified professional career within governmental organisations, private enterprises, or further studies towards a PhD. After completing their degree the student should be able to take part in research, development and investigatigative work within the forensic and medical fields.

## Learning Outcomes

For a Degree of Master (120 credits) students must meet the objectives in the Higher Education Ordinance (1993:100).

### Programme-specific learning outcomes

In addition to the general objectives stated in the Higher Education Ordinance, the student shall, after completed programme

- be able to summarise the state of knowledge in forensic science and adjacent areas regarding methods, findings, and possible applications, critically and correctly in English.
- have acquired understanding of how their own knowledge and skills can contribute to solving various tasks in society
- have in-depth theoretical and practical knowledge of analytical methods and research methodologies in the forensic and related field. This includes knowledge in human genetics, criminalistics, law and psychology, forensic genetics, forensic medicine, forensic chemistry and analytical chemistry.
- be able to independently choose appropriate methods of analysis and perform various biological and chemical tests.
- be able to independently take responsibility for and lead examinations on a scientific basis and to evaluate and report findings from these studies.
- have the neccessary knowledge about the legislation that regulates the field.
- be able to cooperate effectively with team members as well as other societal bodies.

## Layout of the Programme

The programme comprises 120 credits (higher education credits) on the advanced level. The courses assume basic knowledge of genetics, cell biology, molecular biology, classical chemistry and analytical chemistry from the Bachelor level. The student is expected to work in an independent manner and take responsibility for their own learning.

### Semester 1

Medical Genetics, 7.5 credits

Forensic Science and Criminalistics, 7.5 credits

Forensic Genetics and Medicine, 15 credits

### Semester 2

Law, Psychology and Forensic Expertise, 15 credits

Forensic Chemistry, 15 credits

### Semester 3

Analytical Methods for Forensic Science, 15 credits

Elective period, 15 credits

### Semester 4

Degree Project 30 credits, alternatively 45 credits (including elective period)

## Instruction

Throughout the programme, studies are schedule-based with instruction including lectures, laboratory work, practical assignments, group instruction, interactive web-based material and demonstrations. The student will be trained continuously in creativity and problem solving.

Attendance is compulsory for the following components:

1. Lectures containing demonstrations or whose contents complement compulsory course reading
2. Group instruction
3. Seminars
4. Laboratory work and practical assignments
5. Study visits

## Degree

Master of Medical Science with Forensic Science as the main field of study.

## Other Directives

### Examination

Passing grades on all compulsory components and passing grades on examinations are required to pass the course.

Laboratory components not satisfactorily completed may only be completed the next time the course is given and only if there is a place available.

Grading is based on the 3-point grading scale: Fail-Pass-Pass with Distinction or the 2-point grading scale Fail-Pass.

### Entry requirements for admission to the next year of studies

For admission to Year 2, compulsory components from Year 1 must be completed, together with passing grades worth 37.5 credits from the programme, or corresponding. This corresponds to in-depth knowledge of human genetics, forensic genetics, forensic medicine, analytical chemistry and how testimonies and technical evidence are collected, analysed and evaluated in criminal cases.

Following an approved leave from studies, all courses from the preceding semesters must have been passed. The programme has a fixed structure, which means that courses must be taken in the established order.

Exemption from entry requirements may be granted for special reasons. It is the responsibility of each student who does not meet the entry requirements to apply for exemption in good time.

### Approved leave from studies

Approved leave from studies is not granted during semester 1. Leave from studies during semesters 2-4 is handled by the study counsellor. and can be approved for a maximum of one year. Applications regarding leave from studies longer than one year or extension of a current approved leave from studies are handled by the Programme Committee.

General rules for approved leave from studies, resumption of studies, and application for a later part of the programme  
Application for approved leave of studies, resumption of studies, and admission to a later part of the programme must be submitted to the office no later than 15 April ahead of the autumn semester and 15 October ahead of the spring semester. This also applies to students wishing to begin a course during the latter part of a semester. If the application is submitted later, the applicant will be given lower priority for resumption of studies. If the application is submitted late or if it is shown that the student has devoted most of the leave from studies period to activity justifying another priority group, the decision may be reviewed. A certificate to verify this priority must be attached to the application. If studies are not resumed at the proper time, this will be regarded as a termination of studies.

#### Resumption of studies

When the application period expires on 15 April or 15 October, respectively, all students who are qualified will be ranked first in their respective priority group.

#### Priority groups

1. Military service, illness, parental leave (corresponding to parental insurance)

## 2. Research

1. Dissertation at a medical faculty
2. Admission to PhD studies at the Medical Faculty at Uppsala University
3. Full-time research during the leave from studies
3. Unpassed examinations
4. Other (work, travel, other studies, etc.)
5. Students whose application for leave from studies or application to resume studies was submitted late.

## Outline

**Outline applies from:** Autumn 2022

**Established:** 2008-03-31

**Established by:** Programkommittén för biomedicinprogrammet

**Revised:** 2021-06-01

**Revised by:** The Educational Board of Medicine

## Semester 1

3MG011	Medical Genetics 7.5 credits Second cycle Medical Science : Second cycle, has only first-cycle course/s as entry requirements Mandatory
3MG110	Forensic Science and Criminalistics 7.5 credits Second cycle Medical Science : Second cycle, has only first-cycle course/s as entry requirements Mandatory
3MG023	Forensic Genetics and Medicine 15.0 credits Second cycle Medical Science : Second cycle, has only first-cycle course/s as entry requirements Forensic Science : Second cycle, has only first-cycle course/s as entry requirements Mandatory

## Semester 2

3MG104	Law, Psychology and Forensic Expertise 15.0 credits Second cycle Medical Science : Second cycle, has only first-cycle course/s as entry requirements Forensic Science : Second cycle, has only first-cycle course/s as entry requirements Mandatory
1KB155	Forensic Chemistry 15.0 credits Second cycle Chemistry : Second cycle, has only first-cycle course/s as entry requirements Mandatory

## Semester 3

3FK111	Analytical Methods in Forensic Science 15.0 credits Second cycle
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Biomedicine : Second cycle, has only first-cycle course/s as entry requirements

Forensic Science : Second cycle, has only first-cycle course/s as entry requirements

Mandatory

**Elective period 15 credits**

3MG024 Literature project in forensic biology 15 credits

or

3MG105 Master's degree project 45 credits

## Semester 4

3MG103 Master's Degree Project 30.0 credits

Second cycle

Forensic Science : Second cycle, contains degree project for Master of Arts/Master of Science  
(120 credits)

Mandatory

## Goal attainment matrix

### Master's programme in Forensic science

[illegible]





Professional connection outside the academy	x	x	x	x	x			x	x
International perspective		x	x	x					x
Sustainability		x	x	x					x
Written/digital exam	x	x	x	x	x	x			
Home examination				x					x
Seminar	x	x	x	x	x	x	x	x	x
Group work	x	x	x	x	x	x			x
Computer exercises/Bioinformatics/Statistics	x	x	x		x				
Wet lab in course	x	x	x		x	x			
Written report	x	x	x	x	x	x	x	x	x
Oral presentation	x	x	x	x	x	x	x	x	
Poster presentation									x
Opposition/peer commenting		x	x				x	x	
Journal club	x							x	
Case studies		x		x		x			
Other - writing a grant application			x						
Other - mock court trial with other students				x					

# PT Professional Training HT 2021

Date	Time	Title	Lecturer
<b>Block 1</b>			
Mon 30/8	13.15-13.30	Welcome to the Faculty of Medicine, Uppsala University as a Master's student!	Master's Programme Committee Director Prof Mats Målqvist
	13.30-13.50	Information about Uppsala University, The Disciplinary Domain of Medicine and Pharmacy, The N	Vice-Rector The Disciplinary Domain of Medicine and Pharmacy Mats Larhed
	13.50-14.20	Presentation of Master's programmes in Medicine and coordinators/administrators? Medfarm web?	Susanne Tingsborg/Coordinators
	14.30-14.40	Info from MMC Medical Master Council (Master students representing all 10 Master programs at MMC	
	14:40-14.45	Info Study/Career Counsellor	Carina Carlsson
	15.00-15.10	Info from Student Union	Studiebevakaren
	15.10-16.00	Info from BMC, Campus Manager	Daniel Karlsson
Tues 31/8	13.15-14.00	Intro to good communication of research results (Recorded Lectures)	Lina Thorvaldson
	14.15-14.30	Introduction Studium	?
	14.30-15.30	Litteratur search Uppsala University	Kristina Carlsson
Tue 7/9	14:00-14:30	Introduction and Information Professional Training, obligatory; test; assignments etc	Susanne Tingsborg
	14.45-15:30	How to work secure in the lab	Hanne de Mayer, Annie Engström, Anna Maria Näslund
Tue 14/9	10:00-13:00	CQ Cultural Intelligence	PRISMA Charlotte Öberg
Tue 21/9	13.15-15.00	Sustainability	Laila Mendy CEMUS
Tue 28/9	13.15-15	Equality and master suppression techniques	
Internationella enheten?			
Tue 5/10	13.15-15	Introduction to Ethics	Ulrik Kilbohm
Tue 12/10	13.15-14.30	Ethics; Biobanks	Linda Paavilainen
	14.30-15.30	Ethics; Ethical review of animal ethics	Anna Granlund
Tue 19/10	13.15-14	Introduction good communication of research results (Recorded Lectures)	Lina Thorvaldson
		Recorded lectures fo Writing scientific English, Oral presentation techniques, Popular scientific writing, Poster presentation	

	14.15-15.30	Stress	Student Health
Wed 20/10		Innovation Day	
<b>Block 2</b>			
Tue 26/10	13.15-16.00	Entrepreneurship	<i>Drivhuset Philip Gratell</i>
Tue 2/11	13-17	CareerDay UU Innovation/HR/Research Companys etc, Lena	
Tue 9/11	13.15-15.00	Research Ethics	Stefan Eriksson
	15.00-18.00	<b>Discussion recorded lectures/Selftest</b> Biomedicine, Lina Thorvaldson Medical Nuclide Techniques Bo Stenerlöv Infection Biology Susanne Tingsborg Forensic Science Marie Allen Molecular Medicine/IMIM Lena Åslund Medical Research/IMIM Gerli Rosenberg Pielberg	
Tue 16/11	13.15-15.00	Ethics; Science and pseudoscience	<i>Dan Larhammar</i>
Tue 23/11	13.15-15.00	Ethics; Fraud and plagiarism	<i>Dan Larhammar</i>
Tue 30/11	13.15-15.00	Ethics; Brain, sex, gender and behavior	<i>Dan Larhammar</i>
Mon 6/12	13.15-15.00	Ethical Discussion group; Medical Research/IMIM Staffan Johansson, Gerli Rosengren Pielberg	<i>Manuel Guerrero</i>
	15.15-17.00	Ethical Discussion group; Molecular Medicine/IMIM Lena Åslund	"
Tue 7/12	13.15-15.00	Ethical Discussion groups; Infection Biology Susanne Tingsborg	"
	15.15-17.00	Ethical Discussion group; Forensic Science Marie Allen, Medical Nuclide Techniques Bo Stenerlöv	"
Adventsfika MMC			
Wed 8/12	13.15-15.00	Ethical Discussion group; Biomedicine Lina Thorvaldson	"

	U (fail/insufficient)	3 (satisfactory)	4 (good)	5 (excellent)	Grade
<b>Abstract</b>					
<i>Summary of the purpose, method, results and conclusion. Max 250 words.</i>	Not provided, mainly trivial or irrelevant or exceeds the word limit.	Provided but either not well structured or content is somewhat vague, irrelevant or trivial.	Overall well-structured and relevant, with minor flaws in clarity or content.	Clear and well-structured, concisely formulated.	
<b>Introduction</b>					
<i>Summary of previous studies in the field, taking into account any relevant theories</i>	Background information is missing, irrelevant or contains major inaccuracies.	Previous studies in the field are summarised but some parts may be vague, irrelevant, left out or contain minor inaccuracies.	Previous studies in the field are summarised clearly and accurately.	The introduction shows breadth as well as depth in the subject. Comprehensive and concise.	
<i>Aim and motivation of why the study was conducted</i>	Rationale of the study and its aim not addressed	Rationale of the study and its aim are mentioned but may be vague.	Rationale of the study is clearly explained and its aim is properly delimited.	Rationale of the study, its aim and the implications of the results are clearly and concisely formulated.	
<b>Materials &amp; methods</b>					
<i>Explanation of the materials and methods used, including statistical analysis, to the extent that a reader can repeat the study</i>	Some methods are omitted, or several methods are presented vaguely.  Information about necessary ethical approvals and/or considerations is not given.	Explanations allow for overall reproducibility, but some method may be presented vaguely.  Information about necessary ethical approvals and/or considerations is given.	All methods are explained clear enough to allow for full reproducibility.	All methods used are explained clearly and concisely; new or modified methods are explained in detail and standard methods are referenced.  Method selection is briefly motivated.	
<b>Results</b>					
<i>Data selection</i>	Data is too incomplete. No logical connection between methods and data.	Data is fairly complete but some relevant data may be missing or inaccurate.  Some irrelevant data may be included.	Data is relevant, accurate and complete with any gaps being minor.	Data is completely relevant, accurate and comprehensive. No gaps.	
<i>Data presentation. Selection of table or graph types.</i>	Several data sets are presented in inappropriate graph types or table formats.	Most data is presented in an appropriate format but contains some errors in or	All data is presented with appropriate graph types or table formats. Contains only	Data is presented in a table format or graph type that highlights relevant aspects of	

<i>Labeling of graphs and figures.</i>	Labels, units, scales or legends are largely missing.	omissions of labels, scales, units etc. Legends may be too brief or vague.	minor mistakes in labels, scales, units or legends.	the data. Contains no mistakes.	
<b>Discussion</b>					
<i>Conclusions based on data provided</i>	Conclusions have little or no basis in the data provided.  A restatement of results without analysis.	Conclusions generally have basis in the data, but may contain minor gaps.  Conncections between hypothesis, data and conclusions are present but weak.	Conclusions are logically drawn from the data.	Conclusions are completely justified by data.  Conncections between hypothesis, data and conclusions are clear and persuasive.	
<i>Critical evaluation of own results, including limitations of data and/or experimental design</i>	Not provided, or mostly trivial or irrelevant.	Provided but may include some trivial or irrelevant alternative explanations. Some alternative explanations may be omitted.  Own results are compared to previous research.	Relevant limitations of the study and alternative explanations are discussed.  Critical evalutation in relation to previous research is reasonably complete.	New hypotheses/models based on the results are brought forward, as well as suggestions on how these can be tested.  Critical evaluation is complete.	
<i>Significance of the study to relevant societal and/or ethical aspects</i>	Not addressed.	Addressed but vague, implausible or trivial.	Addressed clearly but some relevant aspects may be omitted	Discussed in a plausible and insightful manner.	
<b>Literature &amp; references</b>					
<i>Usage of proper original references</i>	References are absent, irrelevant or incorrectly cited.  Reference list does not follow a standard system.	Original references are used but limited to only a few primary references.  Reference list follows a standard system.	Literature cited is predominantly original references.	Each major concept is supported by original references.  References represent a relevant sample in relation to the subject.	
<b>Cohesiveness</b>					
<i>Readlibility and structure of the text</i>	Disjointed. Difficult to follow the text.	Fairly good readability but transitions are abrupt.	Overall good flow.	Very good flow and readability.	

	Headings and subheadings are not used.	Headings and subheadings are used but may be unclear.	Subheadings aid the understanding of how the text is organised.		
<b>Writing quality</b>					
<i>Word usage, language and grammar</i>	<p>Frequent grammatical errors, incomplete sentences, tense changes, misspellings.</p> <p>Word usage is frequently vague, colloquial or incorrect.</p>	General grammar, spelling and word usage is appropriate but may have some mistakes.	<p>Grammar and spelling have only minor mistakes.</p> <p>Word usage is accurate.</p>	Accurate grammar, spelling and word usage.	

**Comments:**

**Recommended grade:**     ☐ U/Fail

☐ G/Pass



UPPSALA  
UNIVERSITET

Committee for the Master  
Programmes at the Medical  
Faculty

## Complaints and feedback

Welcome to the Master's program at the Medical faculty at Uppsala University!

We hope that you will feel pleased with your courses and the teaching. If you do have questions or complaints regarding your studies, we would like you to follow this communication plan in order to get a quick resolution to your problem. Most issues can be solved easily by speaking informally to a relevant member of the teaching staff.

**First**, talk to your course leader or course administrator and discuss the problem and possible solution. Hopefully, this can lead to immediate improvement and resolution. Examples of questions that should be discussed with the course leader: problems that are related to the course content, for example, seminars, lab practicals, lectures. Also questions about examination, schedule or how to compensate for absence in case of illness should be directed to the course leader.

Examples of questions that should be discussed with the course administrator: course registrations, exam registrations or registrations of results in Uppdok. If you have personal problems, for example, regarding stress or questions about how to plan your studies, you should contact the study advisor (with professional confidentiality). You can book an appointment with her through <https://www.timecenter.se/medfarmuu/>. If you have more serious problems, you can always turn to the Student Health Center: <http://uu.se/en/students/support-and-services/health-care/counselling/>

**Second**, and if problems with a specific course do not lead to a solution, speak to your programme director/coordinator and discuss the issue and possible strategies to resolve the problem. You should also turn to the programme director/coordinator if you have questions about the course choices within the programme.



**Third**, and if you have not been able to solve the problem to satisfaction, speak to others responsible at the department giving the course. For example the head of studies/head of department/equal opportunities representative and discuss the problem and possible solutions.

**Fourth**, and if the problem remains, you can seek help from independent advisors provided by the Uppsala student union (<https://www.uppsalastudentkar.se/international-students/student-union>), as the student liaison officer ([studiebev.med@us.uu.se](mailto:studiebev.med@us.uu.se)) or in severe cases the student ombudsman ([studentombud@us.uu.se](mailto:studentombud@us.uu.se)). You can also discuss the problem with your MMC (Medical Master Council) representative if you have questions/complaints regarding the PT-seminars or other issues that concerns several master programs at the Medical faculty.

### **Give your course feed-back in the course evaluation!**

It may not be possible to solve your problem quickly, but a good strategy to get a positive change for future students is to fill in and submit the course evaluations. A high response rate is an essential instrument for course leaders and program directors when planning for changes to improve the courses and the overall quality of the programs.

The evaluation is read by all responsible teachers in the course and major issues will also be commented in a course report. The report with comments and suggestions for improvements will be available on the student portal to new students admitted the following year.

Further information about where to go with complaints and links to relevant sites can be found at [https://www.uu.se/en/students/your\\_rights/complaints/](https://www.uu.se/en/students/your_rights/complaints/)