

Information scientific internships - Faculty of Medicine VU Amsterdam

We are delighted that you are considering offering an internship opportunity to a student enrolled in the Faculty of Medicine at VU Amsterdam. This document provides an overview of the various programs and associated internship opportunities within the faculty, as well as a detailed description of the specific requirements for each internship.

Our programs

The following programs are part of the Faculty of Medicine VU Amsterdam:

Table 1. Programs of the Faculty of Medicine

Bachelor of Medicine	Dutch	3 years
Master of Medicine	Dutch and English	3 years
Master Oncology (research master)	English	2 years
Master Personalized Medicine (research master)	English	2 years

Types of internships per program

Every internship has different requirements. Table 2 provides an overview of the various internships along with their respective duration and number of European Credits (EC).

Students can earn 60 EC each academic year. One EC represents 28 hours of work. At the VU, 1 week is counted as 1,5 EC. The ECs are used to determine the duration of courses and internships. The internships listed below each have different durations, and accordingly, different amounts of ECs.

Medical students also complete various clinical internships or clerkships in hospital departments. In the Master program these are known as *coschappen* (clinical rotations). Additionally, they are also required to complete a scientific internship. Therefore, in this document, when mentioning internships, we refer only to the scientific internships.

Table 2. Short overview of the types of internships

Study	Type of internship	Length	Number of EC
Bachelor of Medicine	Literature study	4 weeks	6 EC
Master of Medicine	Scientific internship	16 weeks	22 EC
	Extended scientific internship (scientific internship including elective period)	24 weeks	34 EC
	Elective education	8 weeks	12 EC
Master Oncology	Literature study	6 weeks	9 EC
	Minor Internship	20 weeks	30 EC
	Major Internship	24 weeks	36 EC
Master Personalized Medicine	Literature study	6 weeks	9 EC
	Minor Internship	16-20 weeks	24-30 EC
	Major Internship	24 weeks	36 EC

Based on this document, it can be determined which programs and internships best fit the internship opportunities within your department or company.



Literature Review

A literature review involves the student investigating a research question using previously published scientific articles, rather than conducting original research. This process can help summarize conflicting questions or provide justification for conducting new research.

For example, if a company wants to develop a product but finds multiple articles with contradictory findings, a literature review can be helpful. The student would read a large number of articles and draws a conclusion.

Programs that include a literature review internships can be found in table 2.

Scientific Internship

The other types of internships are a scientific internship. This is what the research internship of the Medicine master is called. Both internships in the Science Masters (Personalized Medicine and Oncology) have comparable criteria. They must have a research question, and the internship is primarily focused on scientific research, data collection and analysis, and reporting on this both orally and in writing. All these scientific internship must have a research question etc.

Programs that include a scientific internship can be found in table 2. The main difference between these scientific internships is the duration and the type of supervision required. Since they are part of different programs, the learning outcomes may vary slightly.

Internship supervision

We consider the supervision of our students very important. Each program has different requirements for supervisors of the different internships, see table 3, 4 and 5. You can use this to determine if you can be a supervisor and if so, which type of supervisor. It also has a summary of the tasks expected of each type of supervisor .

Table 3. Supervision literature review Bachelor of Medicine

Supervisor	Frequency of contact	Requirements	Tasks
Individual supervisor	At least 3 meetings during the period of the course	<ul style="list-style-type: none"> - Staff member/ (associate) professor or researcher at the same level/PhD student year 3 or 4 - All have to work in an academic institution 	<ul style="list-style-type: none"> - Supervises and guides the student. Grades the final report
Daily supervisor	At least 3 meetings	<ul style="list-style-type: none"> - PhD student year 1 or 2 - (Physician)researcher in peripheral hospital or non-academic institution 	<ul style="list-style-type: none"> - In case of an external internship, the supervisor is from Amsterdam UMC and the daily supervisor is from the external location

Table 4. Scientific Internship Master of Medicine

Supervisor	Frequency of contact	Requirements	Tasks
Internship coordinator	First contact via e-mail, then via Scorion. Gives preliminary	<ul style="list-style-type: none"> - Member of the VU Scientific Internship committee, Faculty of Medicine - Fixed list of representatives per 	<ul style="list-style-type: none"> - Responsible for scientific internships) within the department/ specialism at Amsterdam UMC. - Is the VU-assessor or assigns another VU-assessor if independence in assessment cannot be guaranteed.





	approval for internship.	specialty/ department	- Serves as the primary point of contact during the internship in case of conflict, problems or changes.
Supervisor	At least one hour per week	<ul style="list-style-type: none"> - A PhD scientific researcher/ doctor - Has published internationally within scientific research in the six years prior to the guidance. 	<ul style="list-style-type: none"> - Pay attention to the student's guidance for at least one hour per week. - Make agreements (and possibly record them in writing) regarding guidance, attendance, planning and timeframe within the predetermined internship period. - Good accessibility of the supervisor during the internship. - Provide (max twice) feedback on the draft internship report. - Assess research proposal, presentation, practical work, professional behavior, reflection and final report.
Daily supervisor	Daily where needed	<ul style="list-style-type: none"> - Is the supervisor or, for example, a PhD candidate who acts under the direct responsibility of the supervisor. 	<ul style="list-style-type: none"> - Works under the responsibility of the supervisor. - Daily support with data collection and data analysis.
Referent (VU-assessor)	Twice during the internship	<ul style="list-style-type: none"> - Member of the VU Scientific Internship committee, Faculty of Medicine - Fixed list of representatives per specialty/ department 	<ul style="list-style-type: none"> - Assess the internship proposal and the final internship report.

Internships and literature study Science masters Oncology and Personalized Medicine (research)

Different parties are involved in the internships. For the faculty, these are the examiner of the internships, who approves the content, assessors and assessments of the internship, and the program coordinator, who can be contacted in case of questions or problems. Additionally, three supervisors are involved, the criteria and their tasks are described below.

Table 5. Science masters: Oncology & Personalized Medicine

Supervisor	Criteria	Tasks	Contact
Assessor	Needs to work at least at the level of assistant professor (UD) and participates in the research project on a regular basis.	<ul style="list-style-type: none"> - Has the final responsibility for the quality of the internship and assessments. - Provides the student with feedback on their practical work and concept versions of the report and oral presentation. 	At least once a month, preferably once a week
Daily Supervisor*	Needs to work at least at the level of PhD candidate or senior research technician.	<ul style="list-style-type: none"> - Teaches the student research skills, laboratory/department rules and assists in the planning of the project. - Provides the student with feedback on their practical work and concept versions of the report and oral presentation. 	Daily or multiple times a week
Amsterdam UMC assessor	Needs to work at least at the level of assistant professor (UD).	Critically reviews and grades the final report.	

*For the literature study, the daily supervisor and assessor can be the same person. The criteria will then be the same as those of the assessor.





Criteria internships

Each internship has different criteria that have to be met in order to be accepted by the examination board of the program. In the appendices we will list these criteria for each internship. Upon reading, compare your internship on offer with the criteria to see which one best matches your offer. It is possible that your internship does not completely align with the criteria. If possible, please, align your internship and in case you need more help, you can contact stageplatform.vu@amsterdamumc.nl.





APPENDIX 1 - Criteria literature study Bachelor of Medicine

- Objective: Answering a scientific research question based on existing scientific literature
- Course period: Once a year for four weeks in January after the Christmas holidays
- Gain experience with:
 - Literature research
 - Critically reading and assessing scientific literature
 - Scientific writing (in English) as preparation for the scientific internship in the MSc program
- The student decides on a topic and searches for an individual supervisor who is an expert on the matter
- The literature review is written in the form of a systematic review article
- The literature review must be written in the English language and contain between 3000 and 5000 words
- Before the end of the first week of the course, the student, in consultation with the supervisor, writes a research proposal describing the research question and method. This proposal is submitted on the Friday of the first week of the course
- Consultation between the student and supervisor takes place at least three times during the course period. During or after the final consultation, the supervisor provides feedback on a draft version of the bachelor's thesis, so that the student can process it before submitting it.
- The deadline for submitting the final version is on the Friday of the fourth week of the course. There are no exceptions to this deadline.
- In addition to the content of the bachelor's thesis, the supervisor also assesses the student's cooperation and independence as well as suspicion of misuse of generative AI
- Deadline for submitting assessment by supervisor is 10 working days after the submission deadline, i.e. mid-February.





APPENDIX 2 - Criteria Master of Medicine Internship

- Medical scientific research (e.g. preclinical, clinical or paramedical scientific research, literature research, status research, laboratory research or epidemiological research)
- Carrying out scientific research is the starting point
- Sufficient facilities and financial resources available to conduct scientific research
- The student must be included in a research group that has regularly published in international scientific journals
- Within the institution it is possible to assess the content of research proposals and research protocols and to test them for medical ethical implications. Medical ethical assessment must be in order before the internship can start.
- Work in accordance with international rules and principles for good scientific behavior and integrity (see also the Amsterdam UMC Research Code)
- Supervisor: a PhD scientific researcher/doctor. The daily supervision can be done by a PhD candidate, but he or she always acts under the direct responsibility of the supervising post-doc and/or (co)supervisor.
- The supervisor has also published internationally scientifically in the six years prior to the supervision.
- Foreign internship supervisor: speaks English or Dutch well enough to properly follow the instructions of the scientific internship.
- Opportunity for the student to present final results to content experts with discussion at an academic level.
- The supervisor must be aware of the rules, guidelines and procedures of the VU scientific internships (student sends the guide to the supervisor, which is also available in an abbreviated version in English, see Canvas).





APPENDIX 3 - Criteria Master Personalized Medicine & Oncology internships

Minor and major internships [Oncology & Personalized Medicine \(research\)](#):

- Internships can be performed in renowned national or international institutes.
- The topic of the Major internship should be related to the content of the master program. For the minor internship, different criteria apply (described below).
- The student is expected to learn how to set up and carry out scientific research. At first this needs to be done under supervision and in a later stage the student should work more independently.
- Research questions and hypotheses have to be clear to the student from the start.
- It needs to be clear to the student how the research has to be conducted, and a project description and broad planning of activities should be available from the start.
- A second assessor working at the Amsterdam UMC at the level of assistant professor (UD) or higher should be appointed.
- Before the start of the internship, the approval of the Examiner internships/literature studies (ILS) needs to be requested using the digital approval form.
- During the internship, a literature survey, theoretical experiment/analysis preparation, practical execution of experiments/analyses, writing of the final report, work discussions and participation in scientific activities at the department should be included.
- During the internship, there needs to be sufficient time for the student to perform research independently and develop the associated research skills. It is not allowed to employ the student just for routine analysis.
- The tasks performed by the student during the internship cannot be considered as a substitute of an employee of the department.
- In principle, all facilities will be taken care of by the hosting department. This includes daily supervision, IT and laboratory infrastructure, equipment, lab materials, possibilities for oral presentations and work meetings, and finally supervision of the final report.
- The department has to accept responsibility for injury, accidents or damage by the student during the presence or during the performance of practical tasks at that department, assuming that the injury, accidents or damage come with the legal responsibility of the department and/or its employees.
- The student needs to have a private liability insurance, covering possible costs of events that may happen during an internship and for which the student is legally responsible
- While it is allowed to do two internships within the same department, it is not allowed to do both internships on the same topic and under supervision of the same daily supervisor. It is allowed to have the same assessor.

Additional criteria:

- Minor Internship Oncology:
 - The Minor internship has to be performed at the Amsterdam UMC (VU/VUmc, Academic Medical Center (AMC)), Sanquin, the Princess Maxima Center or the Netherlands Cancer Institute (NKI).
 - The research topic of the Minor internship does not need to be related to the content of the master program.
- Minor Internship Personalized Medicine
 - The minor internship needs to be performed in The Netherlands and preferably at the Amsterdam UMC (VU/VUmc, Academic Medical Center (AMC)). An internship at other institutes or a company is possible.





- The research topic of the Minor internship does not need to be related to the content of the master program
- Major Internship Personalized Medicine and Oncology
 - During the Major internship all the end terms of the Master program will be assessed, and the report of the major internship is the Master Thesis.

Literature study:

- The literature study can be performed at any chosen national or international renowned institute, provided it is approved by the Examiner ILS.
- The topic of the literature study may be related to Oncology/Personalized Medicine.
- The student is expected to learn to extract the main message out of a large number of publications and acquire an overview of the current knowledge of a certain research topic.
- A student is expected to learn to understand a research question, read relevant literature and make a timely survey of the literature including a critical evaluation of the publications.
- Preferably, the literature study is written in the format of a scientific review article, and at the discretion of the supervisor may be submitted as such to a scientific journal. However, in the latter case it should still be discernable what the contribution of the student was.
- The literature study has to be written in English and should be at least 5000 words.
- Before the start of the internship, approval for the topic and assessors needs to be obtained from the Examiner Internships/Literature Studies (ILS) through the digital approval form.
- The student has to write a Survey Outline describing the content, structure and main objectives of the literature study. The Survey Outline has to be discussed with the assessor and handed in to the program coordinator within two weeks after the start of the literature study.
- At least once during the writing procedure there has to be a progression consult of the student with the assessor.
- When the assessor has indications that the survey may be insufficient, the student in agreement with the assessor should set learning goals for improvement. A report of this reflection needs to be signed by both and handed in at the program coordinator.
- The student has to discuss their findings in an oral presentation.
- The performed literature study and the final report are at discretion of the host institution at which the placement is performed. When necessary, agreements about confidentiality can be made between internal assessors/examiners and external supervisors. The student can be co-author at the time of publication of their results, when the supervisor deems the contribution to be sufficient.
- The tasks performed by the student during the literature study cannot be considered as a replacement of an employee of the supervisor's department.
- While it is allowed to do an internship and literature study within the same department, it is not allowed to do both on the same topic and/or under supervision of the same supervisor.
- Duo literature studies are not allowed.

