

**MASTER'S PROGRAMME
ONCOLOGY**

VUMC

VU UNIVERSITY

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Project number: Q0623

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This report was finalized on April 10 2018

REPORT ON THE MASTER'S PROGRAMME ONCOLOGY OF VU UNIVERSITY

This report takes the NVAO's Assessment Framework for Limited Programme Assessments as a starting point (September 2016).

ADMINISTRATIVE DATA REGARDING THE PROGRAMME

Master's programme Biomedical Sciences

Name of the programme:	Oncology
CROHO number:	60811
Level of the programme:	master's
Orientation of the programme:	academic
Number of credits:	120 EC
Location(s):	Amsterdam
Mode(s) of study:	full time
Language of instruction:	English
Expiration of accreditation:	31-12-2018

The visit of the assessment panel Oncology to the VUmc of VU University took place on 30 and 31 October 2017.

ADMINISTRATIVE DATA REGARDING THE INSTITUTION

Name of the institution:	VU University
Status of the institution:	publicly funded institution
Result institutional quality assurance assessment:	positive

COMPOSITION OF THE ASSESSMENT PANEL

The NVAO has approved the composition of the panel on 27 July 2017. The panel that assessed the master's programme Oncology consisted of:

- Prof. dr. John Creemers (Chair), Department of Human Genetics, Faculty of Medicine, KU Leuven, Belgium;
- Prof. dr. Dirk Snyders, Department of Biomedical Sciences, Faculty of Life Sciences, University of Antwerp, Belgium;
- Prof. dr. Rudi d'Hooge, Laboratory of Biological Psychology, KU Leuven, Belgium
- Prof. dr. Ton de Goeij (emeritus), Faculty of Health Medicine & Life Sciences, Maastricht University;
- Prof. dr. Ilja Arts, Centre for Systems Biology, Maastricht University;
- Dr. Annik Van Keer, Educational policy adviser, Faculty of Science, Utrecht University;
- Boas van der Putten Msc (student-member), PhD student, Amsterdam Institute for Global Health and Development.

The panel was supported by dr. Alexandra Paffen, who acted as secretary.

Appendix 1 contains the curricula vitae of the panel members.

WORKING METHOD OF THE ASSESSMENT PANEL

Preparation

The project manager of QANU met with staff members of the master's programme Oncology on 29 March for a preparatory meeting. QANU received the self-assessment report of the master's programme Oncology on September 14 and made it available to the panel. The panel members read the self-assessment and prepared questions, comments and remarks prior to the site visit. The secretary collected these questions in a document and arranged them according to panel conversation and subject.

In addition, panel members read recent theses from the master's programme. In consultation with the chair, fifteen theses were selected from the academic year 2015-2016, covering the full range of marks given and all specializations. The panel members also received the grades and the assessment forms filled out by the examiners and supervisors. An overview of all documents and theses reviewed by the panel is included in Appendix 6.

The secretary drafted a programme for the site visit. This was discussed with the chair of the panel and the policy officer. As requested by QANU, the programme carefully selected discussion partners. A schedule of the programme for the site visit with all partners is included in Appendix 5.

Site visit

The site visit took place on 30 and 31 October 2017 at VU Amsterdam. In a preparatory meeting on 29 October the panel members discussed their findings based on the self-assessment and on the theses and formulated the questions and issues to be raised in the interviews with representatives of the programme and other stakeholders.

During the site visit, the panel studied a selection of documents provided by programme. They included course descriptions, course materials, written exams, assignments and other assessments.

The panel interviewed the programme management, students, alumni, staff members, members of the Programme Committee and members of the Examinations Board.

After the final meeting with the management, the panel members extensively discussed their assessment of the programme and prepared a preliminary presentation of the findings. The site visit was concluded with a presentation of these preliminary findings by the chair.

Report

After the visit, the secretary produced a draft version of the report. She submitted the report to the panel members for comments. The secretary processed corrections, remarks and suggestions for improvement provided by the panel members to produce the revised draft report. This was then sent to VU University to check for factual errors. The comments and suggestions provided by the programme management were discussed with the chair of the assessment panel and, where necessary, with the other panel members. After incorporating the panel's comments, the secretary compiled the final version of the report.

Definition of judgements standards

In accordance with the NVAO's Assessment framework for limited programme assessments, the panel used the following definitions for the assessment of both the standards and the programme as a whole.

Generic quality

The quality that, in an international perspective, may reasonably be expected from a higher education Associate Degree, Bachelor's or Master's programme.

Unsatisfactory

The programme does not meet the generic quality standard and shows shortcomings with respect to multiple aspects of the standard.

Satisfactory

The programme meets the generic quality standard across its entire spectrum.

Good

The programme systematically surpasses the generic quality standard.

Excellent

The programme systematically well surpasses the generic quality standard and is regarded as an international example.

SUMMARY JUDGEMENT

Standard 1: Intended learning outcomes

The panel learned that the master's programme Oncology is unique in the Netherlands and fills an important niche in the Dutch educational landscape. It focuses on the education and training of novice researchers in the multidisciplinary field of cancer research and aims to provide a scientific mechanistic basis for health maintenance and improve the diagnosis and treatment of cancer. The programme is strongly embedded in a research infrastructure of renowned research institutes, which create a good springboard for students' careers in research. In comparison to the Dutch Biomedical master's programmes, that comply themselves with the domain-specific framework of reference, it has unique intended learning outcomes. These are in the form of four competences (scholar, collaborator, communicator and manager) and in line with the international CanMEDS system and adapted for this master's programme. It is clear from the self-evaluation report how these competences are linked to the Dublin descriptors at a master's level

The panel assesses Standard 1 as good.

Standard 2: Teaching-learning environment

The panel established that the master's programme Oncology is a selective small-scale programme with highly motivated students and a qualified staff. The programme wants to integrate the competences of the novice researcher with (seven) educational principles in the curriculum. One principle focuses on enabling students to build a strong base of knowledge at a high scientific level. The programme wants to enable this with a core of four compulsory courses in the first semester: *Oncogenesis, Tumor Immunology, Tumor Biology & Clinical Behavior* and *Innovative Tumor Therapies*. The panel thought that the quality of the compulsory courses of the academic core was good and certainly of a master's level. Another principle is about the embedding of education within research laboratories and the professional field. The programme offers two research internships (together 66 EC), which allow students to operate in their potential future work environment. According to the self-evaluation report, almost all competences of the novice researcher are tested in the internships: students participate effectively in a multidisciplinary research team, provide verbal and written reports of their research to colleagues and to other stakeholders and participate in scientific discussions on (oncological) research. Furthermore, some of the educational principles (linked to the competences) are especially important during the internships: the embodiment in research laboratories (and the future work environment), the focus on challenge and creativity, independent learning and responsibility. The panel appreciates that the programme works with these important educational principles, which are linked to the competences and that attention is paid to the competences and principles during the internships.

The panel has a few recommendations. It would encourage the programme to work on a clearer learning line. After the first semester of the academic core the students drift apart. The panel was impressed by the high number of students that perform an internship abroad, but the programme should inform, support and monitor students better about and during their internships abroad. It was pleased that the programme recently started to work with a mentor system. Furthermore, the panel would recommend the teaching staff to use more innovative educational techniques and methods. It thinks that these can help to establish a learning line even if students are studying abroad. Finally, the programme should consider enabling an alumni organization. This can create a feeling of community and help to build a network of cancer researchers.

The panel assesses Standard 2 as satisfactory.

Standard 3: Student assessment

The panel has established that the programme has a solid assessment policy and plan. It did notice that the clear policy and plan have not disseminated throughout the organization. For example, in the most recent study guide there is no alignment between the learning objectives and the learning outcomes. This should be made transparent to the students. The panel can confirm that the EC knows



its legal duties and responsibilities. The panel spoke at length with different delegations about the (old) assessment forms of the theses and about the assessment procedure in case of internships performed abroad. The programme was aware about both issues and recently set in motion a number of improvements: it adjusted the assessment forms and it has appointed an examiner of internships, who is responsible for the proper practice of the grading procedure. The panel studied the new assessment forms and has established that they are now linked to the new final qualifications i.e. the competences. The new forms have also been improved by for instance adding rubrics and the assessors motivate their grade more extensively by giving more feedback.

The panel assesses Standard 3 as satisfactory.

Standard 4: Achieved learning outcomes

The panel studied a sample of 15 master's theses from the academic year 2015-2016. The theses were of a master's level and of good to high quality. A number of the major internships were performed at internationally renowned scientific institutes and universities. However, the panel could not ascertain from the accompanying assessment forms if these theses met the intended learning outcomes, because the intended learning outcomes in the form of competences, as well as the assessment forms were introduced only recently.

According to an alumni survey, alumni are properly prepared for their jobs, which they find within a reasonable amount of time after graduation and at an appropriate level. The panel learned that students feel especially well prepared for a scientific academic career and that a high number (about 70%) of graduates enters a PhD-programme. It thinks that the programme should also prepare and monitor students with a non-academic career (about 30%). The panel was glad to learn that the programme recently made an inventory of alumni. It studied the inventory that proved that graduates also find adequate jobs outside academia and research.

The panel assesses Standard 4 as satisfactory.

The panel assesses the standards from the *Assessment framework for limited programme assessments* in the following way:

Master's programme Oncology

Standard 1: Intended learning outcomes	good
Standard 2: Teaching-learning environment	satisfactory
Standard 3: Student assessment	satisfactory
Standard 4: Achieved learning outcomes	satisfactory
General conclusion	satisfactory

The chair and the secretary of the panel hereby declare that all panel members have studied this report and that they agree with the judgements laid down in it. They confirm that the assessment has been conducted in accordance with the demands relating to independence.

Date: April 10 2018



Prof. dr. John Creemers



Dr. Alexandra Paffen

DESCRIPTION OF THE STANDARDS FROM THE ASSESSMENT FRAMEWORK FOR LIMITED FRAMEWORK ASSESSMENTS

Standard 1: Intended learning outcomes

The intended learning outcomes tie in with the level and orientation of the programme; they are geared to the expectations of the professional field, the discipline, and international requirements.

Explanation:

The intended learning outcomes demonstrably describe the level of the programme (Associate Degree, Bachelor's, or Master's) as defined in the Dutch qualifications framework, as well as its orientation (professional or academic). In addition, they tie in with the regional, national or international perspective of the requirements currently set by the professional field and the discipline with regard to the contents of the programme.

Findings

The ambition of VU University Amsterdam (VU) is to be a leading research university which makes a distinctive contribution to the resolution of key issues in society. It wants to generate new scientific knowledge, disseminate it, apply it and pass it on to its students, so that they can play their part in meaningful societal advances. The mission and vision of the master's programme Oncology are related to this ambition. The programme is embedded in the strong research environment of the research institute Cancer Center Amsterdam (CCA), which is a cooperation between the VU Medical Center (VUmc) and the Academic Medical Center (AMC). Oncology is a research priority of both the VUmc and the AMC. The CCA also works together with the Netherlands Cancer Institute (NKI). The CCA is a national and international leading cancer center and has one of the largest oncology research centers in the Netherlands. The content of the compulsory courses of the Oncology master's programme is related to the main research themes of the CCA: Cancer Biology and Immunology, Imaging and Biomarkers, and Treatment and Quality of Life.

The panel appreciates the strong embedding of the master's programme Oncology within renowned research institutes. It feels this embedding and infrastructure provide students with an optimal setting for a national or international career in oncology. It believes the programme fills an important niche within the educational landscape of the Netherlands.

The panel studied the domain-specific framework of reference (DSFR, Appendix 1), which delineates the scope and positioning of the Biomedical Sciences within the Humanities, Natural Sciences and Social Sciences. The master's programme Oncology of the VU identifies itself with the domain of Biomedical Sciences and focuses on the education and training of scientists in the multidisciplinary field of cancer research. The overall aim of the master's programme is to provide a scientific, mechanistic basis for health maintenance and improve the diagnosis and treatment of cancer. Although its focus is on oncology, the programme's purpose is to provide a solid basis in several research fields within the life sciences.

The two-year master's programme (120 EC) is a small-scale programme with a selective intake of a maximum number of 40 students a year and is unique in the Netherlands. It is dedicated to educating and training novice cancer researchers. The final qualifications of the programme describe the competences (and indicators measuring these competences) of this novice researcher. Four roles can be distinguished in the final qualifications: scholar, collaborator, communicator and manager. The programme describes the novice researcher as follows: 'The novice researcher can perform independent scientific research in the field of basic and applied/clinical Oncology, but also outside the field of Oncology. He/she is up-to-date regarding knowledge and research methods in the Oncology field. The novice researcher is a good organizer and is effective in a multi-disciplinary partnership to jointly achieve high quality research. He/she demonstrates professional behaviour and promotes the development, improvement and dissemination of scientific knowledge.'

The panel appreciates these final qualifications in the form of competences, which are distinctive from other final qualifications within the domain of Biomedical Sciences and well suited to this master's programme. It would recommend the programme to think about adding a fifth competence that of the 'biomedical, oncological expert'. The final qualifications in the form of competences are defined in line with the Canadian Medical Education Directives for Specialists (CanMEDS) and adapted by the programme for research. The CanMEDS system is also used by the VUmc and complies with international standards. Furthermore, it is clear from the self-evaluation report how these competences are linked to the Dublin descriptors at a master's level.

Considerations

The panel learned that the master's programme Oncology is unique in the Netherlands. It also has unique intended learning outcomes in comparison with the Dutch Biomedical master programmes that comply with the domain-specific framework of reference. They are formulated as four competences (scholar, collaborator, communicator and manager) and match the CanMEDS system and are adapted for this master's programme. The programme is strongly embedded in a research infrastructure of renowned research institutes, which create a possible springboard for students' careers in research. It fills an important niche in the educational landscape of the Netherlands.

Conclusion

Master's programme Oncology: the panel assesses Standard 1 as 'Good'.

Standard 2: Teaching-learning environment

The curriculum, the teaching-learning environment and the quality of the teaching staff enable the incoming students to achieve the intended learning outcomes.

Explanation:

The intended learning outcomes have been adequately translated into educational objectives of (components of) the curriculum. The diversity of the students admitted is taken into account in this respect. The teachers have sufficient expertise in terms of both subject matter and teaching methods to teach the curriculum, and provide appropriate guidance. The teaching-learning environment encourages students to play an active role in the design of their own learning process (student-centred approach).

Findings

Curriculum

According to the self-evaluation report, the curriculum of the programme (for an overview see Appendix 4) integrates the roles and competences of the novice researcher with seven educational principles, which are related to the VU's philosophy of education. The first principle focuses on enabling students to build a strong base of knowledge at a high scientific level. Thus, the programme starts with a core of four compulsory courses in the first semester: *Oncogenesis, Tumor Immunology, Tumor Biology & Clinical Behavior* and *Innovative Tumor Therapies*. Two additional compulsory courses, *Writing Scientific English* and *Biostatistics*, are offered to train students' academic writing skills and prepare them for publishing in English and performing statistical analyses of research data.

The second principle calls upon the active participation of the student, and the seventh principle, 'the education is provided in a small learning environment where teachers serve as role models' enables this. The programme wants to encourage students to keep up with recent literature and reflect critically on novel developments in the field. The students are expected to actively participate during the compulsory courses and present and defend their work (produced during their *Internships* and the *Literature Study* course) within the scientific community.

The third principle is about the embedding of education within research laboratories and the professional field. The programme offers two research internships (together 66 EC) which allow students to get in touch with their future work environment. According to the fourth principle,



education is focused on challenge and creativity. To this end, the programme has developed interactive and pro-active educational formats such as journal clubs, collaborative projects and debating clubs. The fifth and sixth principles encourage independent learning and students taking more responsibility for their own learning process. The first courses in the curriculum are more structured, while in the subsequent courses (which include journal clubs and projects) students are expected to work more independently. This results in students writing their *Literature Study* with minimal supervision. Students can choose electives in the second year of the programme and are also responsible for the subject of their *Literature Study* and the organization of their internships (as well as selecting their preferred area of research). The panel can only subscribe to these highly relevant principles of education, especially for a specialized, small-scale programme such as this master's programme Oncology.

The academic core was implemented in the academic year 2014-2015. The panel is positive about the quality of the compulsory courses of the academic core. They lay a solid foundation and are certainly of a master's level. The students were also enthusiastic, especially about the expert lectures given during the academic core: the lectures are given by a variety of internal and external experts in the field of Oncology. The panel has two recommendations to make. The first one involves the continuation in the rest of the curriculum of this "strong base of knowledge" (first principle) of the first semester. Although the staff assured the panel that there is a learning line and that the knowledge established in the first semester is included in the following semesters, the panel believes there is room for improvement. The panel found it difficult to identify a clear learning line from the material studied beforehand and presented during the site visit.

The panel's view on the learning line was supported indirectly by the students, who said that they drift apart after the first semester and that there is no exchange of, for example, research findings between them because they do not see each other anymore. The panel also established that there is hardly any contact between first- and second-year students. The programme committee has tried to organize meetings but has not been very successful so far. The panel wants to urge the programme management to think of ways to create a learning community of students, lecturers and alumni. It believes establishing a clearer learning line, which continues after the first semester, and organizing return days can help with this.

The second recommendation concerns the underexposure of some fundamental knowledge. In the opinion of the panel, this could be remedied, for instance, by a compulsory course on Bioinformatics/Data Science. The students and alumni agreed with the panel that this would be a useful addition to the current curriculum. The management team also agreed and told the panel they were working on it. The panel was pleased to learn that attention is being paid to fraud and plagiarism and that all texts go through a plagiarism detector (Turnitin). It recommends that the programme management pay specific and more detailed attention to scientific integrity as well.

The panel also learned from the alumni that little attention was paid during their studies to career development outside academia and research. It was pleased to hear that the programme recently made some changes to the academic core, for example paying attention to patenting and including lectures by speakers from the professional field outside academia and research. There is also an elective course in Biobusiness, which provides insight into the factors that dictate success in the present-day development of therapeutics and diagnostics. The university also organizes a two-day event on career development and opportunities. The panel approves this focus on career development and especially the recent changes and developments within the curriculum.

Internship

The programme has two internships: a minor one (30 EC) and a major one (36 EC). Both internships have to be performed at a research laboratory. The minor internship has to be performed at one of the Oncology Graduate School (OGS) laboratories (including VU/VUmc, NKI, AMC, Sanquin), while the major internship can also be done outside this area, preferably abroad. Students are assessed on their practical laboratory skills, application of knowledge and creative ideas, the research report and an oral presentation. The goal is a clear and demonstrable increase in competences and independence between the minor and major internship. The thesis of the major internship is considered the final product of the programme.

Scientific research in oncology is an international field of study. Students are therefore encouraged to perform their second major internship (36 EC) abroad. Teachers of the programme have international contacts and participate in international organizations in the field of cancer research such as the American Association for Cancer Research (AACR) and the European Organization for Research and Treatment of Cancer (EORTC). They use these networks to create opportunities for internships. The panel learned from the students and alumni that this programme gives them good opportunities to find an internship. In the academic year 2015-2016, 63% of the students did their internship abroad. The panel considers this is a figure to be proud of.

According to the self-evaluation report, almost all competences of the novice researcher are tested in the internships: students participate effectively in a multidisciplinary research team, provide verbal and written reports of their research to colleagues and to other stakeholders, and participate in scientific discussions on oncological research. Some of the above-mentioned educational principles are clearly linked to the competences and are especially important during the internships: the embodiment in research laboratories (and the future work environment), the focus on challenge and creativity, independent learning and responsibility. The panel appreciates the attention that is paid to the competences during the internships.

However, the panel learned from both current students and alumni that most of them had to arrange - and pay for - the internship abroad almost completely by themselves. Both students and alumni appreciate that the programme focuses on independent learning and responsibility, but more information could have been provided beforehand on how to organize an internship and more support given during the process, especially regarding international internships. The panel believes the programme should maintain a better balance during the whole process of the internship between supporting the students on the one hand and teaching them how to support themselves on the other. It felt from the conversation with the teachers that most VU supervisors are reactive rather than proactive in their guidance of students abroad. It learned during the site visit that the internship examiner (see standard 3) of the students only recently began to actively monitor the students who go abroad with help from the mentors (see below). It considers this a good development and a step in the right direction. Monitoring and supporting the students more proactively and thoroughly during their internships abroad could have a positive impact on their study progress, which in some cases is hindered by uncertainty regarding the internships. This could be mutually beneficial for supervisors, students and programme management.

Staff and guidance

The teaching staff has a lot of formal and informal contacts with students, the lines of communication are short, and changes can be implemented quickly. The panel considers the organizational chart of the programme to be rather complex, and there were quite a lot of committees with a great overlap of responsibilities and roles. The programme management reassured the panel that it works well, because of the great overlap in roles.

The teaching staff consists of senior scientific researchers, who work in one of the research groups of the CCA or are actively involved in other research programmes. They are experts in the field of oncology. All course coordinators have received their Basic Teaching Qualification (Basis Kwalificatie Onderwijs, BKO), as have 79% of the teachers involved in the programme. The panel spoke with a



number of qualified and motivated teachers during the site visit. However, it did notice some differences among the teaching staff in their eagerness to get acquainted with and make use of innovative teaching methods (like blended learning, e-learning through a virtual lab or doing online research). It was pleased to learn that the programme wants to expand their activating educational formats and that the first steps have been taken towards this. It believes the programme could really benefit from these innovative teaching techniques, since they can increase the effectiveness and efficiency of learning by students, by providing support and encouraging mutual communication. They could also be used to connect with the large number of students who are abroad to keep track of their progress and the occurrence of problems as well as to provide coaching when necessary.

In 2015-2016 the programme started to work with a mentor system. A mentor (a senior master's programme Oncology teacher or Principal Investigator) is assigned to each student to provide help with career-building issues. The student is expected to contact the mentor at least twice a year and report on the issues. In case of study problems, the mentor can refer the student to the programme coordinator, who can put the student in touch with the study advisor (at the faculty level) if necessary. The panel appreciates the initiative of the mentor system, which may contribute to the programme's educational principles (e.g. the seventh principle "the education is provided in a small learning environment where teachers serve as role models"). According to the students, the support of the mentor is very helpful. The panel thinks the programme should consider broadening the role of the mentor. Although the programme is unique, selective and small-scale, and therefore most students are highly motivated, the students are in need of more support and guidance (as referred to above). The mentor should not only provide help with career issues, but can also help students at the beginning of the programme with the many choices they have to make (e.g. electives to choose) and the preparation of their internship abroad.

Admission and learning environment

The master's programme Oncology is a selective programme and takes in at least 20 and at most 40 new students each year. On average, 25-35 students join the programme every year. Of these students, 41% were international students over the past two years. The admission requirements include an academic bachelor's degree and demonstrable knowledge of Oncology, Immunology, Molecular Biology of Cancer and Immunobiology. The applicants should also have laboratory experience. Prospective students must upload a resume, motivation letter and two letters of reference. An assessment is also part of the admission procedure.

The panel observed that these selection requirements contribute to a small and highly motivated cohort of students who want to specialize in cancer research. It was also pleased to see and hear from the students and alumni that the student population is very diverse. Students with very different academic backgrounds are admitted if they meet the requirements.

The panel believes there is a challenge and an opportunity for the programme to keep in touch with these motivated cohorts of students and keep the students connected to each other. It was pleased to learn that initiatives to monitor alumni have been taken by the programme. It feels that community building, thereby creating a learning community (of cancer researchers), during and after their studies should be encouraged, for example by founding an alumni association. The alumni said they missed an alumni association and would be glad if the programme would organize some sort of alumni meetings on a regular basis. The panel supports this idea.

Considerations

The panel appreciates that the programme works with important educational principles which are linked to the competences. The programme wants to integrate both principles and competences in the curriculum. The panel found the quality of the compulsory courses of the academic core to be good and certainly of a master's level. It learned that the master's programme Oncology is a selective, small-scale programme with highly motivated students and a qualified staff.

The panel has a few recommendations. It would encourage the programme to work on a clearer learning line. After the first semester of the academic core, the students drift apart. The panel was impressed by the high number of students who perform an internship abroad, but the programme should inform students better about internships, and support and monitor them during their internships abroad. It was pleased to learn that the programme recently began to actively monitor the students who go abroad with help from the mentors. It learned that the staff is hesitant about using innovative educational techniques and methods. It feels, however, that these can help to establish a learning line even if students are studying abroad. Finally, the programme should consider establishing an alumni organization. This can create a feeling of community and help to build a network of cancer researchers.

Conclusion

Master's programme Oncology: the panel assesses Standard 2 as 'satisfactory'.

Standard 3: Student assessment

The programme has an adequate system of student assessment in place.

Explanation:

The student assessments are valid, reliable and sufficiently independent. The requirements are transparent to the students. The quality of interim and final examinations is sufficiently safeguarded and meets the statutory quality standards. The tests support the students' own learning processes.

Findings

The master's programme Oncology has an assessment policy, which includes an assessment plan. In the assessment policy, the relation between the final qualifications and learning objectives of the programme components as well as the applied assessment forms are described. The assessment plan elaborates how each component is assessed, which type(s) of assessment is used, and what the weighting is. The different educational formats make use of a variety of assessments such as written tests, presentations, debating club and reports, which fit the content and specific character of the different components. In the study guide, the assessments and the weighting of each course are clearly described and made transparent for the students. The programme makes use of constructive alignment using Miller's pyramid, which distinguishes between various levels of knowledge and skills (from 'Knows', 'Knows how', 'Shows how' building up to 'Does'). Independence and responsibility become more important during the programme and are assessed and weighted accordingly.

The panel studied the assessment policy and plan and found both to be sound and adequate. It also appreciates the use of constructive alignment in the curriculum. It did notice, however, that in contrast to the assessment plan, the learning objectives of the courses in the study guide are not linked to the final qualifications (the competences of the novice researcher). Each course coordinator should not only relate the competences to the programme's components, but also make a link in the course description in the study guide between the learning objectives, the competences (final qualifications) and the assessment. This should be transparent for the students. Although the first steps have been taken, it is clear to the panel that both staff and students still have to internalize the roles and competences that form the final qualifications.

To safeguard the quality of assessments, the Examination Board (EC) monitors the quality of the processes and appoints examiners for the assessments. The examiners are appointed for a period of three years and are responsible for the organization, content and evaluation of the assessments. Each examiner prepares an assessment report in which test data are listed, including decisions on corrections and final scores. The EC evaluates the results and advises the examiner on the final mark. Every written test is developed on the basis of a test matrix and linked to the learning goals and final qualifications. The panel studied a number of courses with well documented course materials and



established that they include a test matrix. It spoke with the EC during the site visit and confirmed that the EC is aware of its legal duty and responsibility.

However, the panel noticed that some procedures and also some important recommendations of the last visitation committee have only recently been put into practice. An important point, which was discussed at length during the site visit, is that the assessment forms of the theses have only recently been edited and linked to the new final qualifications, i.e. the competences. The panel studied a sample of theses which still had the old evaluation forms and found it difficult to establish on what basis the assessment of the theses had been done. During the site visit the panel was informed that the programme now uses new assessment forms. It asked the programme if they could present four new assessment forms. They were handed to the panel shortly after the site visit. The panel studied the new assessment forms and established that they are now adapted and linked to the competences. It was pleased to see that these assessment forms had also been improved, by adding rubrics for instance. The assessors have to motivate their grade more extensively by providing more feedback to the students on the new forms.

The panel was pleased to learn that there is now an examiner of internships, who is responsible for the approval of the internships and the proper practice of the grading procedure. It considers this a good development. During the site visit the panel discussed at length the assessment procedure of internships that are done abroad with staff, management and the EC. It perceived that some staff members found it difficult to contest the grading of the foreign internship supervisors, since they are the students' daily supervisors. The panel believes that the final responsibility of the assessment of the internships should lie with the VU assessor, even for an internship conducted abroad. Only then can the assessment be really valid, reliable and independent. The quality of the final assessment can be safeguarded further by giving more weight to the independent assessment of the oral presentation and letting the oral presentation of an internship abroad take place and be assessed at the VU in Amsterdam. Finally, the judgement of the independent assessor should be given more weight in the final grade of the master thesis.

Considerations

The panel established that the programme has a solid assessment policy and plan. It did notice during the site visit and from the documents it studied that the policy and plan have not fully disseminated throughout the organization. For example, in the most recent study guide, there is no alignment between the learning objectives and the learning outcomes. This should be made transparent for the students. The panel can confirm that the EC is aware of its legal duties and responsibilities. It spoke at length about the assessment forms of the theses and about the assessment procedure for internships conducted abroad. It seems to the panel that the programme is aware about both issues and has recently set in motion a number of steps. It has adjusted the assessment forms and appointed an examiner of internships, who is responsible for the proper practice of the grading procedure. The panel appreciates these actions.

Conclusion

Master's programme Oncology: the panel assesses Standard 3 as 'satisfactory'.

Standard 4: Achieved learning outcomes

The programme demonstrates that the intended learning outcomes are achieved.

Explanation:

The achievement of the intended learning outcomes is demonstrated by the results of tests, the final projects, and the performance of graduates in actual practice or in post-graduate programmes.

Findings

The self-evaluation report contains a table in which the relationship between the competences (intended learning outcomes) and the components of the programme is elaborated. The master's thesis of the major internship is considered the final project of the programme. The panel studied 15 master's theses from the academic year 2015-2016. As already mentioned under standard 3, the panel unfortunately only studied theses which were accompanied by old, unclear, very brief assessment forms without rubrics. This made it difficult for the panel to see if the intended learning outcomes had been achieved. It could only judge the quality and level of the final projects. According to the panel, both the quality and the level of the master's theses were good to high. A number of the major internships resulting in a master's thesis were conducted at internationally renowned scientific institutes (like NKI) or universities (like Harvard, UCLA). The studies covered a variety of topics at the genomic and protein level, used up-to-date methods, and in most cases reflected a critical, scientific attitude of the students.

According to an annual VU survey, alumni find a job at an appropriate level within six months after graduation. The alumni who filled in the survey indicated that they are properly prepared for their jobs. About 70% of the alumni enter a PhD programme after graduation. The panel considers this a figure to be proud of. It learned during the site visit that most students and alumni feel very well prepared for a scientific academic career. The alumni the panel spoke with during the site visit were all PhD students. The programme should, however, pay more attention within the curriculum to the non-academic career orientation, as was already mentioned under standard 2. The panel asked the programme management at length about where the remaining 30% of the graduates ended up. It ascertained that until recently the programme did not monitor this group of students. The panel was pleased to learn that the programme has recently started to monitor all of their alumni actively. After the site visit the panel was handed a rather complete overview that showed that students find work on an adequate level also in consultancy, the ICT sector and laboratories.

Finally, the alumni told the panel during the site visit that a sense of community could be fostered by an alumni association. The panel believes that a specialized master's programme like Oncology can really benefit from a community of alumni. It would encourage the programme management not only to support an alumni association but also help set it up.

Considerations

The panel studied a sample of 15 master's theses from the academic year 2015-2016. The theses were of a master's level, and their quality was good to high, and a number of the major internships were performed at internationally renowned scientific institutes and universities. However, the panel could not ascertain from the accompanying assessment forms if these theses met the intended learning outcomes. Both the intended learning outcomes in the form of competences as well as the assessment forms were adjusted only recently.

According to an alumni survey, alumni are properly prepared for their jobs, which they find within a reasonable amount of time after graduation and at an appropriate level. The panel learned that students feel especially well prepared for a scientific academic career and that a high number of graduates enters a PhD programme. It believes that the programme should also prepare students for a non-academic career. It was pleased to learn that the programme recently conducted an inventory of alumni that proved that graduates also find adequate jobs outside academia and research.

Conclusion

Master's programme Oncology: the panel assesses Standard 4 as 'satisfactory'.



GENERAL CONCLUSION

The panel established that the master's programme Oncology has intended learning outcomes in the form of four competences: scholar, collaborator, communicator and manager. These are defined in line with the CanMEDS system and adapted for this master's programme. The competences are linked to the Dublin descriptors at master's level. The competences are distinctive from other intended learning outcomes of the master's programmes within the domain of Biomedical Sciences. The programme fills an important niche within the Dutch educational landscape. It is strongly embedded within renowned research institutes and provides its students with an optimal infrastructure for a career in oncology

The panel established that the master's programme Oncology is a selective small-scale programme with highly motivated students and a qualified staff. The programme wants to integrate competences of the novice researcher with (seven) educational principles in the curriculum. It wants to build a strong base of knowledge at a high scientific level (first educational principal) through an academic core of four compulsory courses in the first semester: *Oncogenesis, Tumor Immunology, Tumor Biology & Clinical Behavior* and *Innovative Tumor Therapies*. The panel established that the compulsory courses of the academic core lay a solid foundation and are certainly of a master's level.

The panel would encourage the programme to work on a clearer learning line. After the first semester of the academic core the students drift apart. The panel would also recommend the teaching staff to make more use of innovative educational techniques and methods. It thinks that these can help to establish a learning line even if students are studying abroad. The programme should also consider enabling an alumni organization. This can create a feeling of community and help to build a network of cancer researchers.

Another important educational principle is about the embedding of education within research laboratories and the professional field. The programme offers two research internships (together 66 EC), that allow students to get in touch with their future work environment. The panel established that a high number of students perform an internship abroad. It would recommend the programme to inform, support and monitor students better about and during their internships abroad. The programme works with a mentor system that can help enable this.

The programme wants to test the competences of the novice researcher in the internships: students participate effectively in a multidisciplinary research team, provide verbal and written reports of their research to colleagues and to other stakeholders and participate in scientific discussions on (oncological) research. Some of the educational principles (linked to the competences) are also important during the internships: the embodiment in research laboratories (and the future work environment), the focus on challenge and creativity, independent learning and responsibility. The panel appreciates that the programme works with educational principles, that are linked to the competences and that attention is paid to the competences and principles during the internships.

The panel established that the programme has a solid assessment policy and plan, but that the clear policy and plan have not fully disseminated throughout the organization. The panel can confirm that the EC knows its legal duties and responsibilities. The programme recently adjusted the assessment forms and it has appointed an examiner of internships, who is responsible for the proper practice of the grading procedure. The final responsibility of the assessment of the internships should lie with the VU assessor, also in case of an internship abroad. Only then can the assessment be really valid, reliable and independent. The panel studied the new and improved assessment forms and has established that they are now linked to the new final qualifications i.e. the competences.

The panel has established that the sample of 15 theses it studied were of a master's level and of good to high quality. A number of the major internships were performed at internationally renowned scientific institutes and universities. The panel could not ascertain from the accompanying assessment forms if these theses met the intended learning outcomes, since the intended learning

outcomes in the form of competences, as well as the new assessment forms were introduced only recently.

The panel established that alumni are properly prepared for their jobs, which they find within a reasonable amount of time after graduation and at an appropriate level. The panel learned that students feel especially well prepared for a scientific academic career and about 70% gets a PhD position. The panel learned that the programme recently made an inventory of alumni and that graduates also find adequate jobs outside academia and research.

Conclusion

The panel assesses the *master's programme Oncology* as 'satisfactory'.

APPENDICES

APPENDIX 1: CURRICULA VITAE OF THE MEMBERS OF THE ASSESSMENT PANEL

John Creemers (chair) is professor of Biomedical Science at KU Leuven, Belgium. He teaches two courses for bachelor students of Biomedical Sciences, one of which is the bachelor's thesis. His laboratory for Biochemical Neuroendocrinology is part of the Department of Human Genetics, and his research focusses on protein folding, maturation and trafficking in the secretory pathway (regulated). In particular, he specializes in inherited disorders in which these processes are disturbed. He is also director of the Doctoral School of Biomedical Sciences. He is the KU Leuven representative to the League of European Research Universities (LERU) Doctoral Studies Community and a member of the executive committee of ORPHEUS, a network of universities that is committed to developing and disseminating best practices within PhD training programmes.

Dirk Snyders is professor of Biomedical Sciences at the University of Antwerp. His research interests of the past ten years have focused on the molecular structure-function relations in Kv-channels, analyses of LQT mutations and the study of 'silent' Kv subunits. Next to his teaching and research activities, he has been active in administrative functions inside (e.g. member of the Board of Directors of the University of Antwerp) and outside the university (e.g. member of the Physiology review panel of the Research Foundation – Flanders) and is a member of various professional organizations. In 2012 he was a member of the evaluation panel for the Biomedical Sciences programmes in The Netherlands.

Annik Van Keer obtained her PhD at KU Leuven, Belgium, in the Quantum Chemistry Laboratory. She is currently educational adviser at the Betasciences Faculty and programme manager of the master programme Chemical Sciences at Utrecht University. Her main area of expertise is quality assurance. She has solid experience in programme accreditations and the preparation of institutional reviews. Moreover, she has been actively involved in curriculum changes and changes in the organization of education at the Faculty. Before working at Utrecht University, she worked at the Vrije Universiteit Brussel (Brussels, Belgium), where she helped design innovative tutorials.

Ton de Goeij is emeritus professor of Curriculum Development at the Faculty of Health Medicine & Life Sciences at Maastricht University. He was trained as a biochemist and obtained his doctorate cum laude at Leiden University. He then worked as a postdoctoral fellow at the Tufts University School of Medicine (Boston). Later he did research in the Laboratory for Cell Biology & Histology at Leiden University. In 1982 he became a research assistant at the Department of Pathology at Maastricht University and became Associate Professor in 1984. From 1982 to 2012 he carried out pathobiological-oncological research on breast cancer and colorectal cancer and a variety of functions in (bio)medical education. Since 1991 he has been an international consultant for curriculum development.

Ilja Arts has been professor of Molecular Epidemiology of Chronic Diseases at Maastricht University since 2013. Since 1 February 2016 she is also Scientific Director of the Maastricht Center for Systems Biology (MaCSBio). She was in charge of the interfaculty collaboration in the field of systems biology. She came to Maastricht from Wageningen University & Research in 2006 with a VENI grant and has conducted research into nutritional science, molecular epidemiology and analytical chemistry. She obtained her PhD in Wageningen in 2001 in the field of human nutrition.

Rudi d'Hooge is professor of biological psychology at the KU Leuven Faculty of Psychology and Educational Sciences (Belgium). He teaches to large groups of bachelor and master students (mostly in the Psychology, Educational Sciences, and Biomedical Sciences programmes) about neuroscience and brain disorders. He holds degrees in biology and psychology from U Antwerp and VU Brussels, respectively, including a doctorate in Biomedical Sciences and one in Psychology. He is head of the Laboratory of Biological Psychology, where his recent research focusses on the neural mechanisms of learning and memory, and the study of animal models of brain disorders. He holds and has held several administrative offices including a five-year appointment as vice-dean research, membership

of the science advisory board of the university, chair and member of ethical review boards, and elected member of the selection and evaluation committee of his faculty.

Boas van der Putten (student-member) is a PhD candidate at the Amsterdam Institute for Global Health and Development (AIGHD). His current research interests lie in the domain of antimicrobial resistance of *Escherichia coli*, with a special focus on the transmission and host range of the bacterium. During his bachelor and master (both at the University of Amsterdam), he focused on infectious diseases, with research projects on latency of HIV-1 and the host range of avian influenza. Boas accumulated international experience during his studies by studying a trimester at the University of Washington in Seattle and conducting a six-month research project at Imperial College London. Furthermore, he was the secretary of the Board of Studies Biomedical Sciences and helped informing prospective students for the master.

APPENDIX 2: DOMAIN-SPECIFIC FRAMEWORK OF REFERENCE

The biomedical sciences at bachelor and master level focus on a multidisciplinary approach of research questions pertaining to the maintenance of health and prevention of disease in man and animals. They integrate elements of the natural sciences, in particular man-associated areas of biology, chemistry, pharmacy, physics and mathematics, with the medical sciences. A continuous mutual interaction between elements from these disciplines provides the biomedical sciences with their translational character. Obtaining insight in processes at the molecular, cellular, organ and organism level both in the healthy as well as disease state is the foremost driver of biomedical sciences research. The field also encompasses studies at the population level where epidemiological qualitative approaches as well as society directed γ - approaches may be used. Furthermore, elements from the α -sciences play a role in degree programs in the biomedical sciences domain (see Figure 1).

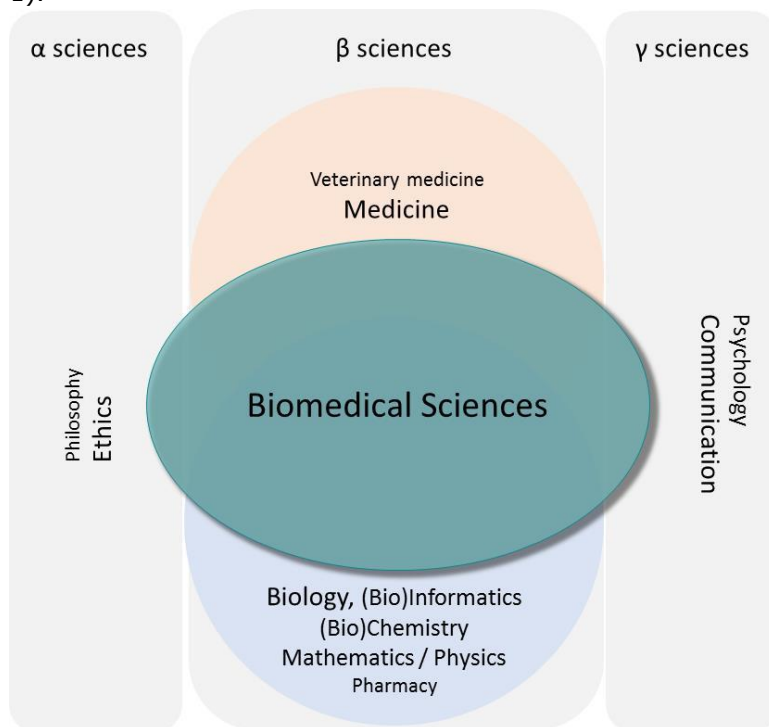


Figure 1. The multidisciplinary field of biomedical sciences. Text size correlates with the position of the indicated discipline within Biomedical Sciences.

For each scientific discipline the proper demarcation is nowadays a challenge given the rising importance of interdisciplinary approaches to address scientific and societal challenges. The multidisciplinary field of the biomedical sciences is no exception to this. Due to its translational character, the strength of the biomedical sciences lies in seamlessly connecting parts of the different core-disciplines. Hence the biomedical domain covers many elements from different disciplines and is primarily characterised by a profound integration of these elements.

Biomedical research thus provides innovative options for health maintenance and disease prevention based on developing insight in the biological processes that govern life. This is for instance seen in research areas such as cell division mechanisms, the interaction between man and microbe as well as aging.

In addition, biomedical sciences focus on the translation of clinical challenges or challenges in the field of public health to experimental research approaches that aim at the provision of a deep understanding of the biological mechanisms that are at the basis of these challenges.

The overall aim is to provide a scientific mechanistic basis for optimal health maintenance throughout life, as well as the improvement of diagnosis and treatment of disease.

At some of our universities the 2-year master's programmes in the field of biomedical sciences have specializations in Management, Communication and Education. Within the current reference framework these specializations focus on respectively (research) management in a commercial setting, societal aspects of research and knowledge acquisition.

APPENDIX 3: INTENDED LEARNING OUTCOMES

Competences Novice Oncology Researcher

<p>Description of the profile of the novice researcher The novice researcher can perform independent scientific research in the field of basic and applied/clinical Oncology, but also outside the field of Oncology. He/she is up-to-date regarding knowledge and research methods in the Oncology field. The novice researcher is a good organizer and is effective in a multi-disciplinary partnership to jointly achieve high quality research. He/she demonstrates professional behavior and promotes the development, improvement and dissemination of scientific knowledge.</p>	
<p>Role 1 – Scholar The novice researcher – in the role of scholar – keeps his/her own knowledge and skills up-to-date and transfers scientific knowledge to others. He/she works independently in a professional manner in the process of drafting, implementing and evaluating areas of research. The novice researcher steers the own professional development.</p>	
<p>Competences and indicators</p>	
<p>The novice researcher:</p>	
1.1	<p>keeps his/her own knowledge up-to-date. He/she:</p> <ul style="list-style-type: none"> – maintains a high level of knowledge on (for the research field relevant) terms, concepts and theories and applies this to the formulation of research questions; – applies knowledge of statistical and epidemiological analyses, as well as computer programs that are relevant for Oncology research, to address relevant research questions, but also recognizes his/her limitations; – keeps knowledge on the latest research methods and innovations up-to-date and knows how to apply these; – makes connections between basic and applied/clinical Oncology issues.
1.2	<ul style="list-style-type: none"> – performs research independently. He/she develops independent research proposals that meet the current status quo; – designs, based on the research plan, experiments and carries them out; – works independently in the research laboratory according to applicable standards; – evaluates and interprets the results of research and relates these to findings from the literature; – reflects critically on his/her own work, role and participation.
1.3	<ul style="list-style-type: none"> – efficiently familiarizes him- or herself with a new area of research. He/she: – is able to navigate efficiently through the scientific literature; – can read, evaluate and interpret the literature to understand a scientific area.
1.4	<p>exhibits adequate professional behavior. He/she:</p> <ul style="list-style-type: none"> – acts in accordance with the current research code; – works precisely, effectively and efficiently; – responds adequately and is on time; – knows the limits of his/her own competence and acts accordingly; – actively seeks feedback from others; – is open to feedback.
1.5	<p>is able to steer his/her own professional development. He/she:</p> <ul style="list-style-type: none"> – evaluates his/her own performance; – puts forward learning goals to improve his/her personal development; – focusses on career and professional opportunities; – aims to independently acquire knowledge and skills for (Oncological) research in the context of lifelong learning.
<p>Role 2 – Collaborator The novice researcher – in the role of collaborator – participates effectively and appropriately in a multidisciplinary research team and in the inter-collegial peer review processes. He/she is able to build a network of contacts and to use them adequately.</p>	
<p>Competences and indicators</p>	
<p>The novice researcher:</p>	
2.1	<p>participates effectively in a multidisciplinary research team. He/she:</p> <ul style="list-style-type: none"> – acts in a collegial way; – respects responsibilities, competences and roles of others; – cooperates with others for a common goal and constructive decision making; – contributes to the effective functioning of the team; – makes cooperation problems discussable and strives to solve them.
2.2	<p>makes adequate use of networks in the research field. He/she:</p> <ul style="list-style-type: none"> – builds and maintains a network in the field of research; – brings in network contacts to solve scientific questions to bring research to a higher level;

	<ul style="list-style-type: none"> - is respectful to network contacts.
2.3	<p>participates in the inter-collegial peer review process. He/she:</p> <ul style="list-style-type: none"> - prompts consultation and feedback from colleagues regarding his/her own research; - provides adequate feedback on the research/publications of other researchers; - provides feedback on their performance; - coaches others in conducting research; - acts as a positive role model for students.
<p>Role 3 – Communicator The novice researcher – in the role of communicator – gives oral and written reports of the research to colleagues in their own discipline and to other stakeholders. The novice researcher participates in scientific discussions and debates and takes a position in such discussions and debates.</p>	
<p>Competences and indicators</p>	
<p>The novice researcher:</p>	
3.1	<p>provides verbal and written reports of the research to colleagues in his/her own discipline and to other stakeholders. He/she:</p> <ul style="list-style-type: none"> - presents (oral and written) examination to colleagues from his/her own discipline; - presents research (oral and written) to other stakeholders; - writes research reports at the level of scientific papers in international peer reviewed journals.
3.2	<p>participates in scientific discussions on (Oncological) research. He/she:</p> <ul style="list-style-type: none"> - provides active contribution to the scientific debate; - prepares and gives presentations at scientific conferences or seminars; - has a critical attitude and makes use of current knowledge in the field.
3.3	<p>participates in the public debate on (Oncological) research. He/she:</p> <ul style="list-style-type: none"> - takes a position in a public debate based on arguments; - puts scientific research in the context of socio-societal debate; - is open to different opinions regarding research; - is aware of the social/societal impact of the research.
<p>Role 4 - Manager The novice researcher – in the role of manager – organizes his/her own research adequately within the applicable quality and financial frameworks, in order to achieve the set goals.</p>	
<p>Competences and indicators</p>	
<p>The novice researcher:</p>	
4.1	<p>can organize and manage scientific research. He/she:</p> <ul style="list-style-type: none"> - works in an organized way and according to a planned schedule; - sets priorities; - detects time delay or complications; - is responsible for the administration of data; - follows relevant legislation and guidelines.
4.2	<p>understands the financial aspects of research. He/she:</p> <ul style="list-style-type: none"> - has knowledge of valorization; - is familiar with budgets for his/her own research; - is familiar with the ways to apply for research grants.
4.3	<p>contributes to the quality improvement of research and of the research institute. He/she:</p> <ul style="list-style-type: none"> - works in accordance with applicable laws and regulations; - organizes research within the current quality standards; - contributes actively to the quality of the research.



APPENDIX 4: OVERVIEW OF THE CURRICULUM

The master's programme Oncology

Structure

The curriculum of the program consists of 120 credits divided over two study years (Figure 2).

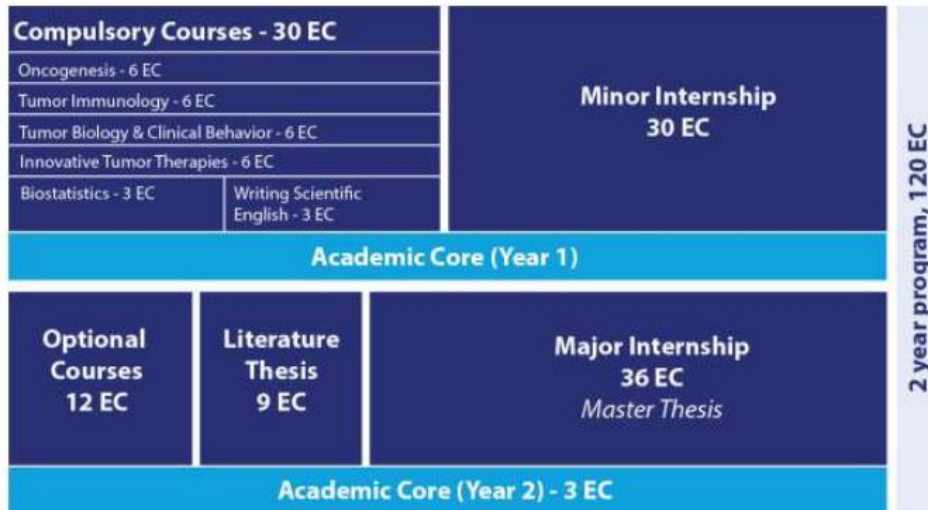


Figure 2: Structure of the program.

To encourage students to utilize their knowledge (and to apply knowledge acquired in one context to another, i.e. lateral thinking) the program has adopted a subject-based coherence. The first four compulsory courses are placed in a logical sequence based on their subject matter: from the molecular level to clinical translation. Division of the final qualifications over the program components ensures a consistent, vertical coherence of content.

The students can plan the subsequent program components themselves, provided they adhere to the rules as laid out in the OER. Optional courses are planned in parallel to the Internships and serve to provide a more in-depth appreciation of the research subjects selected by the student. Students select their own optional course program and submit their selection to the Examination Board for approval. The Examination Board works from a pre-set list of approved optional courses. During the second year, the students do their Major Internship which is finished with writing a major internship report. Furthermore, they do a Literature Study.

APPENDIX 5: PROGRAMME OF THE SITE VISIT

Onderwijsvisitatie Biomedische Wetenschappen, Vrije Universiteit Amsterdam

Datum: 30 en 31 oktober 2017

Locatie: VU (W&N gebouw) kamer P.423

Panelleden

- Prof. dr. John Creemers
- Prof. dr. Dirk Snyders
- Dr. Annik van Keer
- Prod. dr. em. Ton de Goeij
- Prof.dr. Ilja Arts
- Prof. dr. Rudi D'Hoge (niet aanwezig op de visitatie)
- Boas van der Putten BSc (studentlid)

Secretaris: Dr. Alexandra Paffen

Dag 1 - 30 oktober		
8.45	9.00	Aankomst panel
9.00	09.45	Gesprek met management (BSc/MSc BMW, BSc G&L) Huib Mansvelder (opleidingsdirecteur G&L) Madeleine Brouns (opleidingscoördinator G&L) Ronald van Kesteren (opleidingsdirecteur BSc BMW) Renate van Belle (opleidingscoördinator BSc / MSc BMW) Wilbert Bitter (opleidingsdirecteur MSc BMW) Pamela de Boer (Onderwijsdirecteur FALW)
09.45	10.15	Gesprek met management MSc Oncology Prof. Dr. Arjan W Griffioen (opleidingsdirecteur) Dr. Miriam E van Strien (coördinator)
10.15	11.00	Gesprek met studenten BSc (BMW en G&L) Mohamed Badaou (2-jrs KW major, G&L) Tess Wattimury (KW major, G&L) Zowi Huinen (BMW major, G&L) Myrte Tjoa (GZ major, G&L) Eske van Meegen (2e jr BMW) Floris Mebius (2 ^e jr BMW) Thomas Boerstra (3e jr BMW) Lieke Welvaarts (3 ^e jr. BMW)
11.00	11.15	Overleg (=pauze)
11.15	12.00	Gesprek met studenten MSc BMW Hylja Heese (2-jrs Imm+IPH) Dominique Hamelink (3-jrs InfDis+Comm) Suzanne van Gelderen (3-jrs Imm+ULO) Patrick Mulder (2-jrs InfDis+Imm)
12.00	12.45	Gesprek met docenten BSc (BMW en G&L) Esther Molenaar (G&L) Mathijs Bergman (G&L/ BSc BMW) Michael van Emden (G&L) Loek van der Kallen (G&L) Jan Kooter (BSc BMW) Micha Wilhelmus (BSc BMW) Douwe Molenaar (BSc BMW)
12.45	13.00	Overleg panel
13.00	13.45	Lunch (=pauze)
13.45	14.30	Gesprek met docenten MSc BMW Dirk Essink (IPH) óf Andrew Gilmoor (IPH) Frank Kupper (Science Communication) Ivette van Kooijk (Immunology-VUmc)

		Tjerk Jan Schuitmaker-Warnaar (Science in Society) Coen Kuijl (Inf Dis-VUmc) Leontien Diergaarde (VUmc)
14.30	15.15	Gesprek met studenten MSc Oncology (in het Engels) Ilona Baaten (2-jrs) Tamara Broughton (2-jrs) Kari Brown (2-jrs) Marieke Dekker (2-jrs) Awa Gassama (1-jrs) Marjolein Lansbergen (1-jrs)
15.15	15.45	Overleg, pauze
15.45	16.30	Gesprek met docenten MSc Oncology Prof. Dr. Ruud H Brakenhoff (coördinator Oncogenesis) Dr. Rob Wolthuis (coördinator Oncogenesis) Dr. Erik Hooijberg (coördinator Tumor Biology and Clinical Behavior) Dr. Esther Hulleman (examinator keuzevakken) Dr. Victor L.J. Thijssen (Examinator stages en literatuurstudies)
16.30	17.00	Gesprek met alumni MSc Oncology Inge van der Werf, MSc (PhD student VUmc-CCA - Diamond Program) Shanna Handgraaf, MSc (PhD student NKI) Zuhir Bodalal (PhD student Vumc) Kaylee Keller (PhD student UMC Utrecht) Anniek Zaalberg (PhD student KNI)
17.00	17.45	Gesprek met alumni (BSc/MSc BMW, BSc G&L) G&L: Fleur Hierink (MSc Toxicology and Environmental Health, UU) Zoë Bood (MSc Global Health, VU) Bastiaan Bruinsma (AIO Neurosciences, VU) Janneke Verberk (Epidemiologist National Immunisation Programme, RIVM) BSc BMW Tamara Hillenaar (MSc Biomol) Anna de Bruijn MSc BMW Pamela Jakobs (MSc BMW, IPH Junior Associate De JeugdZaak) Anne-Sophie Koning (MSc BMW PhD research LUMC)
17.45	18.15	Korte nabespreking dag 1/benoemen aandachtspunten dag 2
18.30	20.30	Diner panel

Dag 2 - 31 oktober

8.45	9.30	Aankomst panel, inzien documenten, voorbereiding gesprekken, inloopspreekuur
9.30	10.00	Gesprek met Opleidingscommissies (BSc/MSc BMW, BSc G&L) Maiza Campos (voorheen: voorz. G&L) Mathijs Bergman (vrz. BSc en MSc BMW) Laura van Nierop (student-lid G&L) Mathijs Bergman (voorz. BSc en MSc BMW) Jacqueline Broerse (docent MSc BMW) Tommy Pattij (docent BSc BMW) Amber Besseling (student-lid BSc BMW)
10.00	10.30	Gesprek met Opleidingscommissies (MSc Oncology) Prof. Dr. Peter JF Snijders (voorzitter) Prof. Dr. Marjolein van Egmond (docentlid/ Coördinator Tumor Immunology) Kelly Boelaars (2-jrs studentlid) Yasemin Turan (2-jrs studentlid)

10.30	11.00	Gesprek met Examencommissies (BSc/MSc BMW, BSc G&L) Peter van Ulsen (vice voorzitter facultaire examencommissie) Marc Soethout (lid toetscommissie) Jeroen Dudok (voorz. deelexamencie G&L) Trynke Hoekstra (lid deelexamencie G&L) Mark Verheijen (voorz. deelexamencie BSc en MSc BMW) Fred Boogerd (lid deelexamencie BSc en MSc BMW)
11.00	11.30	Gesprek met Examencommissies (MSc Oncology) Dr. Jacqueline Cloos (voorzitter deelexamencommissie) Dr. Marjolein J Greuter (deelexamencommissie, specialisatie Epidemiology) Dr. DM (Michiel) Pegtel (deelexamencommissie, specialisatie Oncology)
11.30	12.30	Overleg panel/ Voorbereiden eindgesprek
12.30	13.00	Lunch (=pauze)
13.00	13.45	Eindgesprek management (BSc/MSc BMW, G&L) Huib Mansvelder (opleidingsdirecteur G&L) Madeleine Brouns (opleidingscoördinator G&L) Ronald van Kesteren (opleidingsdirecteur BSc BMW) Renate van Belle (opleidingscoördinator BSc en MSc BMW) Wilbert Bitter (opleidingsdirecteur MSc BMW) Pamela de Boer (Onderwijsdirecteur FALW)
13.45	14.15	Eindgesprek management MSc Oncology Prof. Dr. Chris H Polman (decaan VUmc School of Medical Sciences) Prof. Dr. Gerda Croiset (directeur VUmc School of Medical Sciences) Prof. Dr. Arjan W Griffioen (directeur Master Oncology) Dr. Miriam E van Strien (coördinator Oncology)
14.15	16.00	Opstellen voorlopige bevindingen
16.00	16.30	Mondelinge rapportage voorlopige bevindingen <i>Opleidingsdirecteuren, opleidingscoördinatoren, onderwijsdirecteur, beleidsmedewerker</i>



APPENDIX 6: THESES AND DOCUMENTS STUDIED BY THE PANEL

Prior to the site visit, the panel studied the theses of the students with the following student numbers:

2538287	2552396	2550450
2059223	2558952	2504909
2126133	1761129	2523982
1910256	2500143	1906194
2077906	2504728	2557612

During the site visit, the panel studied, among other things, the following documents (partly as hard copies, partly via the institute's electronic learning environment):

Course materials of the following courses

- Oncogenesis
- Tumor immunology
- Tumor Biology & Clinical Behavior

Examination Board:

- Annual report
- Documentation on quality control

Reports Programme Committee

After the site visit the panel studied four new assessment forms.