

**PHILOSOPHY OF SCIENCE, TECHNOLOGY  
AND SOCIETY**

FACULTY OF BEHAVIOURAL, MANAGEMENT AND  
SOCIAL SCIENCES

**UNIVERSITY OF TWENTE**

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This report was finalized on 19 September 2017

# REPORT ON THE MASTER'S PROGRAMME PHILOSOPHY OF SCIENCE, TECHNOLOGY, AND SOCIETY OF THE UNIVERSITY OF TWENTE

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 Philosophy of Science, Technology and Society (PSTS)

Name of the programme:	Philosophy of Science, Technology and Society (PSTS)
CROHO number:	60024
Level of the programme:	Master
Orientation of the programme:	Academic
Number of credits:	120 EC
Location(s):	Enschede
Mode(s) of study:	Full time, part time
Language of instruction:	English
Expiration of accreditation:	31-12-2018

The visit of the assessment panel Philosophy to the Faculty of Behavioural, Management and Social Sciences of University of Twente took place on the 11<sup>th</sup> and 12<sup>th</sup> of May 2017.

## ADMINISTRATIVE DATA REGARDING THE INSTITUTION

Name of the institution:	University of Twente
Status of the institution:	Public
Result institutional quality assurance assessment:	Positive

## COMPOSITION OF THE ASSESSMENT PANEL

The panel that assessed the master's programme consisted of:

- Prof. M.J.B. (Martin) Stokhof, Professor of philosophy of language at the University of Amsterdam (chair)
- Prof. H.H.A. (Bert) van den Brink, Dean, University College Roosevelt and professor of Philosophy, Utrecht University
- Prof. J.P. (Jan) Opsomer, professor, University of Leuven, Director of De Wulf-Mansion Centre
- Prof. S. (Sigrid) Sterckx, professor in Ethics, Ghent University; adjunct research fellow, University of London
- L. (Lydia) Baan Hofman, MA, Alumna Master Academic Teacher in Philosophy, Tilburg University (student member)

The panel was supported by dr. B. van Balen, who acted as secretary.

Appendix 1 contains the curricula vitae of the panel members.

# WORKING METHOD OF THE ASSESSMENT PANEL

## *Cluster*

The master's programme Philosophy of Science, Technology and Society (PSTS) of the University of Twente was assessed as part of the Philosophy cluster, which encompasses 23 programmes at nine universities: Utrecht University, Leiden University, University of Twente, Tilburg University, University of Amsterdam, VU University Amsterdam, Radboud University Nijmegen, Erasmus University Rotterdam and University of Groningen. Utrecht University served as the first point of contact on behalf of all nine universities. Dr. E. van Rijswoud, project manager at QANU, assisted the cluster with organisational and practical matters.

The project manager approached independent panel members based on the programmes' recommendations. The NVAO approved the panel composition on 17 February 2017.

- Prof. M.J.B. (Martin) Stokhof, professor of the Philosophy of Language, University of Amsterdam (chair)
- Prof. H.H.A. (Bert) van den Brink, Dean University College Roosevelt & professor of Philosophy, University of Utrecht
- Prof. J.P. (Jan) Opsomer, professor, KU Leuven, Director of De Wulf-Mansion Centre
- Prof. S. (Sigrid) Sterckx, professor of Ethics, University of Ghent; permanent research associate, Centre for Health, Law, and Emerging Technologies of the University of Oxford
- N.W. (Natascha) Rietdijk, BA, research master student of Philosophy, University of Utrecht (student member)
- L. (Lydia) Baan Hofman, MA, alumna Master Academic Teacher in Philosophy, Tilburg University (student member)

Dr. Erwin van Rijswoud was the project manager for the entire cluster, and secretary for the site visits to the University of Utrecht, University of Amsterdam and Erasmus University Rotterdam. Dr. Barbara van Balen acted as secretary for the other site visits.

The Philosophy cluster was evaluated according to the NVAO assessment framework 2016. Because this assessment framework allows considerable latitude in how the programmes to be assessed complete their self-evaluation report, agreements were made at an early stage at the cluster level about the content of the self-evaluation report, the appendices, and the student/programme committee chapter, as well as the format of the development dialogue. To avoid any interference with the panel's evaluation task, it was agreed that this meeting would be planned during the site visit, after the deliberations about the evaluation were complete. With these agreements, all programmes were able to comply with the NVAO assessment framework 2016 in mutually consistent but still individual ways.

On January 27 the panel held a preliminary meeting, during which the assignment for the assessment panel, the procedure for the entire series of visits and the procedure for each visit were discussed; the assessment framework was also reviewed, and it was agreed to hold an interim plenary meeting with the complete panel and the secretaries after the first four visits to safeguard the consistency of the assessments. The two secretaries involved also met to coordinate their work after each site visit. When the project leader was not present during a visit as secretary, he joined the final meeting to promote consistency in the assessment of the different programmes.

## *Preparation*

In preparation for the assessment of the master's programme, the management supplied a self-assessment report that described the current state of affairs and provided useful information. The project manager checked the report for completeness before sending it to the panel members. The chair of the panel selected fifteen master theses, covering the full range of marks awarded.



### *Site visit*

A site visit to the Faculty of Behavioural, Management and Social Sciences at the University of Twente took place on the 11 and 12 May 2017 in the presence of all five panel members, assisted by a NVAO-certified secretary. Prior to the site visit, the panel asked the programme management to select representative interview partners. It met with the programme management, students, staff, alumni, members of the examination board and members of the programme committee during the site visit. For the programme of the site visit, see Appendix 5.

The panel also examined relevant study material, assessment forms and additional material during the site visit (listed in Appendix 6). It gave students and lecturers the opportunity to meet informally during a consultation hour outside the set interviews. One student made use of this opportunity to present his view of the programme. The panel used the final part of the visit for an internal meeting to discuss its findings. The visit concluded with an oral presentation of the preliminary impressions and a general observation by the chair of the panel which was open to all.

During the site visit a session was organised for a development dialogue between the programme management and the assessment panel. The report of this dialogue is included as a separate annex.

### *Report*

Based on the panel's findings, a draft report was prepared by the secretary. All panel members commented upon the draft report, and their comments were implemented accordingly. Subsequently, the programme management checked for factual irregularities. Comments by the programme management were discussed between the secretary and the chair and other panel members, where necessary, before finalising the report.

### *Decision rules*

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. The panel may suggest an improvement period (see Improvement period).
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**

The master's programme Philosophy of Science, Technology and Society (PSTS) is an English-language, multidisciplinary programme with a focus on the interaction of science & technology with society. This unique profile is greatly appreciated by the panel. It is an internationally renowned programme in the philosophy of technology.

The programme has developed from a broad concept of the philosophy of technology, in which both traditional philosophical as well as empirical approaches and methods are used. Enrolment is open to students from a wide range of disciplinary backgrounds from the Netherlands and abroad.

The programme formulated final qualifications regarding knowledge and skills, which meet the internationally accepted descriptions for academic master's programmes and the Dutch qualification framework and fit the Domain-Specific Framework of Reference developed by the Dutch programmes for Philosophy. The panel considers the final qualifications well formulated, realistic and adequate for the master's level. It appreciates that the programme formulated final qualifications regarding both knowledge and skills.

## **Standard 2**

PSTS is a two-year programme structured as follows: semester 1 introduces the students to the foundational disciplines; semester 2 deepens their knowledge and skills and starts combining knowledge and skills in multidisciplinary projects. In semester 3 students specialize in one of the four profiles (Technology & the Human Being; Technology & Values; Dynamics of Science, Technology & Society; Ethics & Technology) and train their research skills. In semester 4 the students carry out a thesis project and, optionally, an internship.

The content of the courses is strongly linked to ongoing research in the two departments housing the academic staff. The quality of the teaching staff is good, and several members are internationally acknowledged experts in their field. All teaching staff members are involved in research. Students are satisfied with the didactic qualities of the academic staff and mentioned that they are approachable; their doors are always open for the students. The panel is very positive about the international diversity of the teaching staff, which in its view clearly adds to a challenging and inspiring international learning environment.

The facilities and environment of the University of Twente campus are very good for this specific programme, with the University's high-tech labs and innovative research, as well as spin-off companies and start-ups nearby.

The panel established that the learning outcomes of the courses are in line with the final qualifications, and that the curriculum enables students to achieve them. The students come from backgrounds in several disciplines. This heterogeneity is consciously employed in educating the students to use a multidisciplinary approach in dealing with challenges at the intersection of technology, science and society. The curriculum, staff, services and facilities constitute a coherent teaching-learning environment for the students.

## **Standard 3**

The UT assessment policy framework defines the necessary measures and provisions to promote and maintain the quality of tests, assessments and exams. The validity of the testing is promoted by carefully aligning test formats with course objectives. To ensure reliability, assessment schemes at the course level indicate how the various tests are weighted and which criteria are used to assess the results, for example in the form of rubrics for grading an essay.

The procedures for preparing and assessing the final project are described in the final project guide. To ensure validity, the final project includes several test formats: a written text (a thesis reporting about the research project), an oral exam and a colloquium. The criteria have been combined in an extensive assessment format. The final project is assessed and graded by at least two staff members:



the supervisor and the examiner; the latter is not involved in the supervision. The panel recommends revising the thesis assessment form with regard to the weight of the subcriteria and is of the opinion that some steps still have to be taken in the development of a common understanding among the staff concerning the assessment criteria and procedures.

The panel established that the Faculty of Behavioural, Management and Social Studies has an adequate quality assurance system. The programme advisory committee plays an active role in quality assurance, and the panel was particularly impressed by the contribution and active participation of the students in the programme committee. It noted that the newly appointed chair of the Examination Board (EB) has a clear vision of the tasks of the EB and has sufficient control of the execution of rules and regulations regarding the quality of assessments.

#### **Standard 4**

The panel verified that the learning goals of the courses are in line with the intended learning outcomes of the programme and that the course assessments do adequately test the learning goals. It is convinced that students who have finished the master's programme PSTS have achieved the intended learning goals.

The panel studied 15 master's theses to establish whether the graduates have achieved the programme's intended learning outcomes. The level of the master's theses concurs with that expected for an academic master's programme. The theses showed that the students are able to integrate philosophy and technology and to reflect from a philosophical standpoint on technological issues. They also revealed that students have the skills to communicate their findings to a general public and can contribute to science communication and policy development on complex issues. On average, the grading of the theses is somewhat on the high side, but according to the panel all students definitely passed.

The panel encourages the management to be stricter with upholding the rules that students have to finish their graduation project on time and adhere to the set length of the thesis.

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

#### *Master's programme Philosophy of Science, Technology and Society*

Standard 1: Intended learning outcomes	good
Standard 2: Teaching-learning environment	satisfactory
Standard 3: 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: 19 September 2017

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Prof. dr. M.J.B. Stokhof  
Chair

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Dr. B.M. van Balen  
Secretary

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

The Faculty of Behavioural, Management and Social Sciences of the University of Twente offers five bachelor's programmes and ten master's programmes, in addition to the master's degree programme Philosophy of Science and Technology in Society (PSTS). The faculty is directed by a dean, who is advised by a management team and the Faculty Council. The PSTS programme is led by a programme director; its teaching staff is provided by the Departments of Philosophy and of Science, Technology & Policy Studies (STePS).

## **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. Insofar as is applicable, the intended learning outcomes are in accordance with relevant legislation and regulations.

## **Findings**

The self-assessment report states that the PSTS programme fits in the University's 'High Tech, Human Touch' profile. The University of Twente aims to educate students with multidisciplinary competencies, a 'high tech, human touch attitude' and an international orientation. With its focus on the interaction of science & technology with society and a multidisciplinary approach, the PSTS master's programme is in line with this educational vision. Furthermore, both students and staff have a range of backgrounds, both internationally and disciplinary. PSTS is an English-language master's programme, dedicated to the philosophy of technology.

PSTS teaches students to analyse, reflect on and assess the interaction between science and technology on the one hand, and human beings, values and societies, on the other.

The self-assessment report presents the goal of the programme as partly analytical and interpretative and partly normative. The programme developed from a broad concept of the philosophy of technology, in which both traditional philosophical and empirical approaches and methods are used. According to the panel, PSTS thus presents a challenging and internationally unique program in philosophy and the interaction with scientific and technological disciplines. It is a distinct addition to the diverse landscape of master's programmes in philosophy in the Netherlands, and it is internationally well-known.

This is reflected in the fact that the programme has an international and diverse student population. Enrolment is open to students from a wide range of disciplinary backgrounds from the Netherlands and abroad. This diversity in backgrounds of the students adds to the multidisciplinary character of the programme.

The programme has formulated final qualifications regarding knowledge and skills (see appendix 3) and compared them with the Dublin descriptors. This comparison indicates that the final qualifications of PSTS meet the internationally accepted descriptions for academic master's programmes and the Dutch qualification framework. The panel believes the final qualifications are well formulated, realistic and adequate for the master's level. It appreciates that the programme formulated final qualifications regarding both knowledge and skills. The programme is a distinct addition to the diverse landscape



of master's programmes in philosophy in the Netherlands according to the panel. It is internationally well-known and successfully attracts an international and diverse student body.

Although the normative and interpretative aspects of the programme are valued, the panel feels that the programme's orientation also requires attention to quantitative methods in general and to measure the impact of science and technology, in particular.

### **Considerations**

The panel is convinced that the unique profile of Philosophy of Science, Technology and Society is a welcome addition to the diverse landscape of master's programmes in philosophy in the Netherlands. The programme developed from a broad concept of the philosophy of technology, in which both traditional philosophical and empirical approaches and methods are used. According to the panel, PSTS presents a challenging and internationally unique program in philosophy and the interaction with scientific and technological disciplines.

The panel concluded that the intended learning outcomes meet the Dutch qualifications framework and tie in with the international perspective of the requirements set by the professional field and the discipline. They fit the domain-specific framework of reference developed by the Dutch programmes for Philosophy.

The panel recommends that the programme also pay attention to quantitative methods.

### **Conclusion**

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**

The full-time variant of the PSTS programme is a two-year master's programme, leading to a MSc degree, spread over four semesters. Semester 1 introduces the students to the foundational disciplines in the philosophy of technology; semester 2 deepens their knowledge and skills and starts combining them in multidisciplinary projects. In semester 3 students specialize in one of the four profiles (Technology & the Human Being, Technology & Values, Dynamics of Science, Technology & Society, Ethics & Technology) and hone their research skills. In semester 4 the students carry out a thesis project and, optionally, an internship. An overview presented in the self-assessment report clearly illustrates how the aims of the courses align with the final qualifications of the master's programme. See appendix 4 for an overview of the curriculum.

In the first semester the following courses are offered: Philosophy of Technology, Philosophy of Science in Practice, Science and Technology Studies, History of Science and Technology, Philosophical Theories and Methods, and Ethics and Technology I (all 5 EC).

In the second semester special attention is paid to homogenizing the relevant knowledge and skills of students from different disciplinary backgrounds. This is done particularly in the TechnoLab course

(7 EC) and the PhiloLab course (3 EC). In the TechnoLab course students are made familiar with different approaches and frameworks used in engineering, the social sciences and the humanities. The disciplinary differences between the students are actively used to encourage mutual learning. The PhiloLab course (3 EC) aims at acquainting the students with academic & research skills. Along with these 'Labs', the second semester includes the following courses: Philosophical Anthropology and Technology, Technology and Social Order, Society, Politics and Technology, Ethics and Technology II (all 5 EC).

The issue of 'homogenizing' relevant knowledge and skills was discussed extensively during the site visit with the management and academic staff, as well as with the students and alumni. At first, the panel had some concerns about the introductory level of the courses in the first and second semester and whether they offered sufficient depth for students with a background in either philosophy or technology. In their interview with the panel, students reported that they heard from some of their fellow students with a philosophy background that the philosophy courses were not very challenging. But they did not experience that as a problem: for them, there are enough challenges in applying philosophical theories to the field of technology. The management and the teachers emphasized that the heterogeneity of the student body is consciously used in the courses. Their diverse backgrounds add to the multidisciplinary nature of the programme, and students are stimulated to co-operate in order to challenge each other and deepen their knowledge and skills. Students appreciated this teaching method and confirmed that the heterogeneity was of added value. The panel agrees with the staff and students, but wants to stress that the academic (master's) level of the courses should be closely monitored. It recommends offering summer courses for prospective students with a deficiency in either philosophy or technology. The management mentioned that this suggestion was already under consideration and had resulted in the MOOC course Philosophy of Technology and Design, starting in May 2017.

In the first semester of the second year, students follow a research skills training in MasterLab 1 and specialize in one of the three profiles: Technology and the Human Being; Technology and Values; or Dynamics of Science, Technology and Society, or they apply for a special Ethics & Technology profile offered in collaboration with the 4TU Centre for Ethics & Technology. In the last semester the students carry out their thesis project and, optionally, an internship. The panel noted that the explicit training of academic skills, research skills specifically, is scheduled relatively late in the curriculum. In discussion with students and academic staff, it turned out that writing and presentation skills are also practised and tested in the first-year courses and the Labs. However, this is not explicitly mentioned in the learning goals and assessment plan and not visible in the above-mentioned overview of courses and final qualifications. The panel recommends making the development of academic and research skills more transparent in the curriculum.

The panel appreciates that the programme leaves room for an internship in 'a professional profile' track. However, it learned from the students that it takes quite some effort to find and arrange an interesting and relevant internship. They often started too late with the preparations to be able to include an internship in their individual programme. The panel advises the programme to provide the information about internships earlier in the programme, and to facilitate and stimulate students to connect with the innovative companies and start-ups in the vicinity of the University.

The panel verified that the content of the courses is strongly linked to ongoing research in the two departments housing the academic staff members. Furthermore, students are expected to attend research colloquia at these departments as part of the curriculum. The quality of the teaching staff is good; several members are internationally acknowledged experts in their field. All teaching staff are involved in research. Half of the teaching team has obtained their UTQ (University Teaching Qualification), the other half is relatively new and working on their qualification. Students are satisfied with the didactic quality of the teachers and mentioned that the staff is approachable; their doors are always open for the students. The panel is very positive about the international and disciplinary diversity of the teaching staff, which clearly adds to a challenging and inspiring international interdisciplinary learning environment in its opinion. It also appreciates the research



meetings, in which teachers and students present their research and receive feedback from the participants. Students spoke highly of these meetings.

The facilities and environment of the University of Twente campus are very good for this specific programme, with the University's high-tech labs and innovative research, as well as spin-off companies and start-ups nearby.

The number of students has recently increased. Enrolment rose from 13 in 2011 to 27 students in 2015 and 2016. From the discussion with the programme management and the Dean, the panel learned that the target for enrolment is set at 50-80 students, which is considered rather ambitious. But the panel agrees with the management that if there are more students, then more staff can be hired and the programme can gain in quality.

### **Considerations**

The panel established that the learning outcomes of the courses are in line with the final qualifications and that the curriculum enables the students to achieve them. The students come from diverse backgrounds in several disciplines. This heterogeneity is explicitly employed in educating the students to use a multidisciplinary approach to deal with challenges on the crossroads of technology, science and society. The panel observed that the diverse inflow is of added value to the programme and the education of the students. The content of the courses is strongly linked to ongoing research, and the students are well trained in academic and research skills. However, the panel recommends that the development of these skills be made more transparent in the curriculum.

The panel appreciates that the programme leaves room for an internship. However, students could be facilitated more strongly in finding and establishing a relevant internship.

The academic and didactic quality of the staff are adequate, and the environment and facilities of the UT campus are of great value to the quality of this unique programme. Curriculum, staff, services and facilities constitute a coherent teaching-learning environment for the students.

### **Conclusion**

The panel assesses Standard 2 as 'satisfactory'.

#### **Standard 3: 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 recent UT Framework for Assessment Policy (2016) defines the necessary measures and provisions to promote and maintain the quality of tests, assessments and exams. The panel verified that all course objectives have been aligned with the PSTS final qualifications, and course examinations are aligned with the course objectives.

According to the self-assessment report, the validity of testing is promoted by carefully aligning test formats with the course objectives. To ensure reliability, assessment schemes at the course level indicate how different tests are weighted and which criteria are used to assess results, for example in the form of rubrics for grading an essay. In the case of written assignments or essays, teachers also provide students with qualitative feedback. The final project always takes the form of a research assignment. The procedures for preparing and assessing the final project are described in the final

project guide. To ensure validity, the final project includes several test formats: a written text (a thesis reporting about the research project), an oral exam and a colloquium. The rubrics and criteria used for the final thesis project have been combined in an extensive assessment format. The final project is assessed and graded by at least two staff members: the supervisor and the examiner; the latter is not involved in the supervision.

Until 2015-2016 the programme had its own Examination Board (EB). The programme now falls under the scope of the Examination Board for Interdisciplinary Studies (together with two other Master's programmes of the Faculty). The former EB had a system of safeguarding the quality of course assessments by means of an annual screening. Each year a third of all courses are selected and 'paired': the teaching teams of paired courses evaluate each other's course assessment for validity, reliability and transparency. Due to the recent restructuring, this annual screening was not performed in 2015-2016. The new structure also caused some imbalance in the relation between the EB and the programme, meaning that the EB could not perform its tasks as desired. This imbalance has now been repaired. The course assessment screening restarted in 2016-2017.

The panel had a meeting with the Examination Board (EB) during the site visit and was impressed by the resolute and pro-active attitude of the team. The chair in particular was very clear about the tasks and responsibilities of the EB and indicated that its first concern is to check whether teachers and managers follow the rules and regulations, and if they use the available quality assurance instruments in an appropriate manner. The chair emphasized that the board approaches the management and staff in a critical but constructive manner. The panel very much appreciates the active and professional way in which the Examination Board has recently been fulfilling its duties and responsibilities.

The panel also had a meeting with the programme committee and concluded that it is performing its tasks in an adequate and proactive way. It is making a valuable contribution to the quality of the programme. The panel was also impressed by the appendix created by PSTS students in the self-assessment report. It provides an excellent evaluation of the strengths and weaknesses of the PSTS programme and good insight into the experiences and opinions of the students. It was of great value to the assessment panel, and showed the active involvement of the students in quality assurance and on the programme committee.

The panel reviewed a selection of the graduation theses (or final projects), as well as the accompanying assessment forms. It noted that there is not yet a common understanding amongst the staff of the programme as to how to use these forms. For example, some of the assessors only ticked the boxes on the form and did not provide any argumentation for the grading of the thesis. Furthermore, the panel had some questions regarding the assessment criteria and their weighting in the final grading of the thesis. For example, students who fail on one of the criteria (e.g. clear research question) can compensate with a high qualification on other items (e.g. process). The panel deems this undesirable, as students at the academic level should pass on all the aspects of the thesis, including important ones such as the research question. Although in practice this has not led to considerable shortcomings in thesis assessment, the panel is of the opinion that the thesis assessment needs to be improved with regard to this matter.

The panel discussed the use of the final project assessment forms with the EB and learned that the tasks and roles of both the supervisor and the examiner in the programme are currently being reviewed. The overall assessment procedure has changed during the last 1.5 years; the second assessor is no longer involved in the supervision, and the assessment should lead to one grade that is reached by consensus between the supervisor and the second assessor.

The panel is also of the opinion that some other aspects of the assessment procedure can be made more transparent. For example, teachers should publish the grading rules for courses on the 'blackboard', the electronic learning environment. The panel did get the impression that everything



legally required is part of the quality assessment system, but not every staff member is acquainted with the system or sufficiently aware of the importance of quality assurance.

The panel found that there is a quality assurance system and that progress has been made, but improvements are needed in its implementation. Taking the active EB and the way in which it acts upon this into account, the panel trusts that the EB will soon gain sufficient control over the safeguarding of assessments.

### **Considerations**

The panel established that the Faculty of Behavioural, Management and Social Sciences has an adequate quality assurance system. The programme committee plays an active role in quality assurance, and the panel was particularly impressed by the contribution and active participation of the students.

It has furthermore confirmed that the newly appointed chair of the Examination Board (EB) has a clear vision of the tasks of the EB and has sufficient control of the execution of rules and regulations regarding the quality of assessments.

The panel advises reconsidering the thesis assessment with regard to the relative weight of the subcriteria and is of the opinion that some further steps have to be taken in the development of a common understanding amongst the academic staff concerning the assessment criteria and procedures.

### **Conclusion**

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 panel concluded that the learning goals of the courses are in line with the intended learning outcomes of the programme and that the course assessments adequately test them. It is convinced that students who have finished the master's programme PSTS have achieved the programme's intended learning goals.

The panel studied 15 master's theses to establish whether the graduates had achieved the intended learning outcomes of the programme; in general, they had achieved the level expected of a master. The panel would have graded some of the theses slightly lower and other theses slightly higher, but the differences were within acceptable boundaries. The grading of the theses was not always entirely consistent and on average somewhat on the high side in the view of the panel. But all theses showed sufficiently that the graduates had achieved the master's level. The panel could see the aims of the programme reflected in the theses. The students obviously integrated philosophy and technology and were able to reflect on technological issues from a philosophical point of view. The theses showed that the students were able to communicate their findings to a general public and to contribute to science communication and policy development on complex issues.

The panel has some remarks regarding the graduation project. The programme yield has been improving, but is still not good. No more than 25% of the students manages to finish the programme within two years. The panel realises that these figures are somewhat influenced by students who are studying part-time while not registered as such, as well as by students who are reluctant to finish because it is better for their CV to do an internship while still studying rather than being unemployed. According to the panel, it is a basic skill that students learn to finish on time and produce reports and papers that meet size limits. Alumni reported to the panel that their theses were not assessed on their length; they could pass with theses that far exceeded the maximum word count specified by the programme.

The programme management recently decided that the length of the thesis should be one of the criteria for the decision as to whether the student will be allowed to finish the project and prepare for graduation. The teaching staff told the panel that, at present, they encourage the students to limit the size but that there is no penalty for exceeding the maximum length. The panel encourages the management to uphold the rules regarding the timely completion and maximum length of the thesis more strictly.

The self-assessment report of the PSTS programme contained some information about the current position of alumni: a substantial share of the alumni ends up in academia in the Netherlands and abroad and an almost equal number holds positions as a consultant or policy advisor. The alumni the panel interviewed were all positive about the programme and the way they were prepared for further studies and the job market. They mentioned, in particular, that they learnt how to write in a structured and scientific way and how to communicate their research findings to a general public. The alumni were positive about the general level of the programme and the academic skills they developed in the programme.

### **Considerations**

The panel concludes that the graduates of the master's programme PSTS have achieved the intended learning outcomes. The level of the master's theses is in agreement with what can be expected for an academic master's programme. The theses showed that the students are able to integrate philosophy and technology and reflect on technological issues from a philosophical standpoint. They revealed that students have the skills to communicate their findings to a general public and that they can contribute to science communication and policy development on complex issues. The grading of the theses is on average somewhat high in the view of the panel, but all students definitely passed. The panel encourages the management to be stricter on upholding the rules that students have to finish on time and limit the size of their thesis to the set length.

### **Conclusion**

The panel assesses Standard 4 as 'satisfactory'.

## **GENERAL CONCLUSION**

The panel is very positive about the unique profile of the Philosophy of Science, Technology and Society programme. The Faculty of Behavioural, Management and Social Sciences of University of Twente offers an adequate master's programme, which enables the students to achieve the intended learning outcomes. The panel assesses the master's programme Philosophy of Science, Technology and Society as good for standard 1 and satisfactory for standards 2, 3 and 4. Following the NVAO decision rules, the panel's general conclusion is that the programme meets the criteria for accreditation.

### **Conclusion**

The panel assesses the master's programme Philosophy of Science, Technology and Society as 'satisfactory'.



## APPENDICES

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

**Martin Stokhof** is professor of Philosophy of Language at the University of Amsterdam. He publishes on formal semantics and pragmatics, philosophy of language, and the philosophy of Wittgenstein. He co-authored a two-volume textbook on logic and formal semantics, and wrote an introduction to the philosophy of language. He was elected a member of the KNAW (2006), the Institut international de philosophie (2007), and the Academia Europea (2016).

His administrative experience includes chair of the KNAW-NVAO accreditation committee for research masters in the humanities (2010-2015); chair of the Humanities Council of NWO (2004-2010); scientific director of the Institute for Logic, Language and Computation at the University of Amsterdam (1998-2004). Since 2014 he has been a member of the Scientific Council of the European Research Council, and vice-president and domain coordinator for the Social Sciences and Humanities domain since January 2017.

**Bert van den Brink** is professor of Political and Social Philosophy at the University of Utrecht. He is Dean of University College Roosevelt in Middelburg, one of the honours colleges of the UU. He was previously department head and director of education of Philosophy at the University and vice-dean of Bachelor's and graduate education in the Faculty of the Humanities. In his teaching and research, he focuses on issues of political justice, the philosophy of social relationships and comparative political philosophy between China and Europe.

**Lydia Baan Hofman** obtained her Bachelor's and Master's degree in Philosophy at Erasmus University Rotterdam. In her master's thesis, she designed a theoretical framework which sheds light on the relation between philosophy lessons at secondary schools and the self-image of pupils. Following her Master in Philosophy, Lydia completed the Master's program Academic Teacher in Philosophy at Tilburg University and thereby obtained a first-degree teaching qualification. She has experience in teaching philosophy at the primary and secondary school level, and is currently a tutor in Philosophy at the EUR.

**Jan Opsomer** is professor of philosophy at the University of Leuven, Belgium, and director of the De Wulf-Mansion Centre for Ancient, Medieval and Renaissance Philosophy. Previously, he was professor at the University of South Carolina and the Universität zu Köln. He has held visiting positions at King's College London, the Institute of Classical Studies, London, the University of Lausanne, the Humboldt Universität Berlin, the École Pratique des Hautes Études in Paris, and La Sapienza in Rome. He is a specialist in ancient philosophy, particularly of Early Imperial and Late Ancient Platonism.

**Sigrid Sterckx** is professor of Ethics and Political and Social Philosophy at Ghent University. She lectures in courses on theoretical and applied ethics as well as social and political philosophy. Her current research projects focus on: biobanking; patenting in biomedicine; organ transplantation; end-of-life decisions; and global justice.

She has published more than 140 books, book chapters and articles in international academic journals, including the co-authored book *Climate Change and Individual Responsibility* (Palgrave, 2015) and the co-edited book *Continuous Sedation at the End of Life: Ethical, Clinical and Legal Perspectives* (CUP, 2013). Sterckx is a permanent research associate of the Centre for Health, Law, and Emerging Technologies, University of Oxford, and an associate member of the Centre for the Study of Global Ethics, Department of Philosophy, the University of Birmingham. Sigrid also serves on the Belgian Advisory Committee on Bioethics.

## APPENDIX 2: DOMAIN-SPECIFIC FRAMEWORK OF REFERENCE

### 1. Inleiding

De filosofie stelt vragen naar de fundamenten van de werkelijkheid, naar de grondslagen en grenzen van kennis en wetenschappen en naar de principes van moreel en politiek handelen. Daarnaast biedt de filosofie kritische reflectie over verklaringen van menselijk gedrag, over ontwikkelingen in de geschiedenis en in de actualiteit en ontwikkelingen in de vakwetenschappen. Een aantal vraagstukken kent al een lang denktraditie binnen de filosofie, zoals vragen naar de mogelijkheid van kennis en over de vrije wil, terwijl andere vraagstukken pas recent tot maatschappelijke en filosofische vragen hebben geleid, zoals de vraag wat duurzaamheid met opvattingen van de mens van doen heeft of de impact van de kwantummechanica op ons concept van natuur. In de studie filosofie komen studenten op zeer verschillende wijzen in aanraking met wijsgerige en maatschappelijke vraagstukken. Studenten leren om gedachten van andere (filosofen) zo precies en helder mogelijk te formuleren en analyseren, vooronderstellingen bloot te leggen en eventueel te confronteren met andere perspectieven, om tenslotte tot eigen gedachten te komen, die zij zo accuraat mogelijk weten te presenteren en te beargumenteren. Op die wijze bekwamen ze zich in het interpreteren van teksten en debatten met het oog op het bijdragen aan mogelijke oplossingen van vraagstukken en wijsgerige problemen. Opleidingen profileren zich in de mate waarin zij op bepaalde wijsgerige vraagstukken zelf centraal stellen of filosofische vragen in een bredere context plaatsen, zoals in relatie tot bepaalde maatschappelijke, institutionele of politieke vraagstukken. Filosofie kan op bachelor en (research) masterniveau worden gevolgd. De opleidingen waar we ons in dit referentiekader op richten zijn bachelor programma's, eenjarige academische masterprogramma's en interdisciplinaire (tweejarige) masterprogramma's. Geen opleiding zal alle aspecten van de filosofie in het onderwijs of onderzoek thematiseren; opleidingen zullen een beredeneerde keuze maken waarin een brede basis (die tot minimale eindtermen leidt), met profielbepalende elementen wordt gecombineerd.

Hierna gaan we eerst in op minimale eindtermen van de opleidingen (secties 2 en 3), waarna profielbepalende elementen voor de opleidingen worden benoemd (sectie 4).

### 2. Eindtermen bachelorprogramma's

De zogenaamde Dublin descriptoren beschrijven de eisen waaraan Europese universitaire opleidingen moeten voldoen. De descriptoren beschrijven onderzoek- en inhoudelijke eindtermen in termen van (1) kennis en inzicht, (2) toepassing van kennis en inzicht, (3) oordeelsvorming, (4) communicatievaardigheden en (5) leervaardigheden. Voor bachelor programma's gelden de volgende eindtermen:

#### 1. Kennis en inzicht

- a. Kennis, vaardigheid en inzicht op het gebied van vakgebied, en het bereiken van de eindkwalificaties
- b. Academisch denken, handelen en communiceren
- c. Hanteren van specifieke kennis van een vakgebied in een bredere wetenschappelijke, wetenschapsfilosofische en maatschappelijke/culturele context

#### 2. Toepassing van kennis en inzicht

- a. Academisch denken, handelen en communiceren
- b. Hanteren van relevant wetenschappelijk instrumentarium
- c. Gedragsnormen die gelden tijdens de studie en binnen de wetenschap

#### 3. Oordeelsvorming

- a. Eigen persoonlijke overtuigingen ter discussie leren stellen
- b. Kritische reflectie op oordelen, argumenten, informatieve teksten



#### 4. Communicatievaardigheden

- a. Academisch denken, handelen en communiceren
- b. (Wetenschappelijk) communiceren in de eigen taal
- c. Gedragsnormen die gelden tijdens de studie en binnen de wetenschap

#### 5. Leervaardigheden

- a. Voorbereiden op een verdere studieloopbaan
- b. Studenten worden vanaf het eerste jaar vertrouwd gemaakt met theorie en praktijk van wetenschappelijk onderzoek.

We geven hieronder tussen haakjes aan welke Dublin descriptor met welke eindterm correspondeert.

De minimale eindtermen van de opleidingen wijsbegeerte zijn:

#### 2a. Bachelorprogramma's filosofie (180 EC)

##### Kennis en inzicht

- a. De afgestudeerde heeft kennis van de geschiedenis van de wijsbegeerte, van haar interne ontwikkeling en van haar inbedding in de geschiedenis van de cultuur (1a, 1c);
- b. De afgestudeerde heeft kennis van de belangrijkste hoofdgebieden van de wijsbegeerte, namelijk theoretische filosofie, praktische filosofie en geschiedenis van de filosofie en de daarin aanwezige aandachtsgebieden in de filosofie (zoals bijvoorbeeld logica en ethiek), van de hoofdproblemen in deze domeinen en van de posities die daarin verdedigd worden (1a, 1b, 1c);
- c. De afgestudeerde heeft kennis van de belangrijkste thema's in de hedendaagse wijsgerige discussies (1a);
- d. De afgestudeerde heeft kennis van (of kennismemaakt met) het werkveld van filosofen, zodat hij in staat is een vervolgtraject (master of carrièreperspectief) te bepalen (5a, 5b).

##### Vaardigheden

- a. De afgestudeerde heeft geleerd wijsgerige teksten te bestuderen en begrijpen, zowel van klassieke als van hedendaagse auteurs, en kan de argumentatiestructuur van een tekst ontleden, de begrippen verhelderen, de vooronderstellingen achterhalen, alsmede een tekst situeren zowel in een (filosofie-) historisch als in een thematisch kader (2a, 2b, 2c);
- b. De afgestudeerde heeft geleerd kritische vragen te formuleren en doordenken ten aanzien van wijsgerige en maatschappelijke vraagstukken, om zo bij te dragen aan het systematisch ontrafelen, analyseren en beantwoorden van die vraagstukken (3a, 3b);
- c. De afgestudeerde kan zelfstandig relevante literatuur rond een thema vinden, de kwaliteit ervan beoordelen, en hanteert gangbare academische normen in het verwerken van die literatuur (2b);
- d. De afgestudeerde kan een wijsgerig probleem zelfstandig formuleren en analyseren, en kan hiervan verslag doen (2a, 2b, 2c);
- e. De afgestudeerde kan zelfstandig een positie formuleren en beargumenteren en kritisch in discussie gaan met medestudenten, docenten of een breder publiek over een wijsgerig vraagstuk (1c, 5b, 2a, 2b, 3b);
- f. De afgestudeerde kan schriftelijk verslag doen van een wijsgerige analyse op dusdanige wijze dat de analyse van de kwestie, het formuleren van het probleem en het oplossen ervan op heldere en systematische wijze aan bod komt (4a, 4b, 4c, 5b);



- g. De afgestudeerde kan mondeling een onderwerp helder en gestructureerd presenteren en daarbij verschillende standpunten kritisch belichten (4b);
- h. De afgestudeerde kan kennis op het gebied van de filosofie op academisch verantwoorde wijze zowel op een filosofisch als op niet-filosofisch geschoold publiek overbrengen (4a, 4b, 4c, 5b).

## 2b. Bachelor filosofie van een bepaald wetenschapsgebied

Voor bachelor programma's die een bachelor filosofie aanbieden voor een bepaald wetenschapsgebied gelden de volgende eindtermen:

### Kennis en inzicht

- a. De afgestudeerde heeft kennis van en inzicht in de inhoud en methoden van het betreffende wetenschapsgebied op bachelor niveau (door middel van programmaonderdelen die door de faculteit van het betreffende wetenschapsgebied worden verzorgd) (1a, 1c);
- b. De afgestudeerde heeft kennis van en inzicht in de centrale onderdelen van de wijsbegeerte, zowel historisch als systematisch (1a, 1b, 1c);
- c. De afgestudeerde heeft kennis van en inzicht in centrale onderdelen van de wijsbegeerte van het wetenschapsgebied, in het bijzonder kernbegrippen, theorieën, problemen en methoden (1a, 1b, 1c, 2a, 2b);
- d. De afgestudeerde heeft kennis van en inzicht in de wetenschappelijke en maatschappelijke betekenis van de wijsbegeerte in het algemeen en van de wijsbegeerte van een bepaald wetenschapsgebied in het bijzonder (1c, 2b, 2c);
- e. De afgestudeerde heeft kennis en inzichten zoals voorkomend in relevante vakwetenschappelijke literatuur kritisch kunnen verwerken (2b, 3b);
- f. De afgestudeerde heeft voldoende wetenschappelijk niveau om tot een geëigende masteropleiding toegelaten te kunnen worden, dan wel zich met succes op de arbeidsmarkt te begeven (5a, 5b).

### Vaardigheden

De afgestudeerde ...

- a. Kan onder supervisie een onderzoek van beperkte omvang formuleren en uitvoeren (2b);
- b. Kan onderzoek in een bepaald wetenschapsgebied plaatsen in het bredere kader van de wijsgerige reflectie op dat wetenschapsgebied (2a, 2c);
- c. Kan wijsgerige vaardigheden van logisch-analytische, ideeën-historische dan wel empirisch-filosofische aard toepassen op problemen, theorieën en debatten die gerelateerd zijn aan het betreffende wetenschapsgebied (2a, 2b, 2c, 4a, 4b);
- d. Kan zelfstandig een heldere en beargumenteerde probleemstelling formuleren en uitwerken (4a, 4b);
- e. Kan een systematisch en helder betoog houden, mondeling en schriftelijk (4a, 4b, 4c);
- f. Kan constructieve kritiek geven en verwerken (3a, 3b).

### Masterprogramma's

De Dublin descriptoren die gelden voor masterprogramma's zijn de volgende:

#### 1. Kennis en inzicht

Heeft aantoonbare kennis en inzicht, gebaseerd op de kennis en het inzicht op het niveau van Bachelor en die deze overtreffen en/of verdiepen, alsmede een basis of een kans bieden om een originele bijdrage te leveren aan het ontwikkelen en/of toepassen van ideeën, vaak in onderzoek verband;

## 2. Toepassen kennis en inzicht

Is in staat om kennis en inzicht en probleemoplossende vermogens toe te passen in nieuwe of onbekende omstandigheden binnen een bredere (of multidisciplinaire) context die gerelateerd is aan het vakgebied; is in staat om kennis te integreren en met complexe materie om te gaan;

## 3. Oordeelsvorming

Is in staat om oordelen te formuleren op grond van onvolledige of beperkte informatie en daarbij rekening te houden met sociaal-maatschappelijke en ethische verantwoordelijkheden, die zijn verbonden aan het toepassen van de eigen kennis en oordelen;

## 4. Communicatie

Is in staat om conclusies, alsmede de kennis, motieven en overwegingen die hieraan ten grondslag liggen, duidelijk en ondubbelzinnig over te brengen op een publiek van specialisten of niet-specialisten;

## 5. Leervaardigheden

Bezit de leervaardigheden die hem of haar in staat stellen een vervolgstudie aan te gaan met een grotendeels zelfgestuurd of autonoom karakter.

Er zijn aan de Nederlandse universiteiten verschillende eenjarige masterprogramma's filosofie te vinden, die zich ofwel presenteren in de volle breedte van de filosofie, ofwel een focus op een toepassingsgebied kennen. Dit maakt dat de volgende minimale eindtermen van een masteropleiding filosofie (60 EC) als volgt geformuleerd worden:

### 3a. Eindtermen van masteropleidingen filosofie (60 EC)

Kennis en inzicht

- a. De afgestudeerde heeft verdiepende kennis in tenminste een van de specialisaties binnen de filosofie (1);
- b. De afgestudeerde heeft inzicht in de positie van zijn wijsgerig specialisme ten opzichte van wijsbegeerte in het algemeen en/of ten opzichte van andere relevante wetenschapsgebieden en/of ten opzichte van cultuur en samenleving (1);
- c. De afgestudeerde heeft inzicht in de rol die filosofen kunnen spelen in de samenleving (5).

Vaardigheden

- a. De afgestudeerde kan t.a.v. wetenschappelijke of maatschappelijke vraagstukken zelfstandig formuleren wat de filosofische vraag is, deze analyseren en bijdragen aan oplossingen (2);
- b. De afgestudeerde kan schriftelijk verslag doen van een wijsgerige analyse, waarbij zowel de analyse van de kwestie, het formuleren van het probleem en het oplossen ervan op heldere en systematische wijze aan bod komt (4);
- c. De afgestudeerde kan mondeling een onderwerp helder en gestructureerd presenteren en daarbij verschillende standpunten kritisch belichten (2, 3, 4);
- d. De afgestudeerde kan op academisch verantwoorde wijze kennis op het gebied van de filosofie overbrengen op zowel een filosofisch als niet-filosofisch geschoold publiek (2, 4, 5));
- e. De afgestudeerde kan zelfstandig een positie formuleren en beargumenteren en kritisch in discussie gaan met medestudenten, docenten of een breder publiek over een wijsgerig vraagstuk (3, 5).



### 3b. Eindtermen van gespecialiseerde masteropleidingen filosofie (60-120 EC)

Een aantal opleidingen filosofie spitst zich toe op een deelgebied binnen de filosofie (zoals toegepaste ethiek of techniekfilosofie) of werkt intensief samen met andere disciplines. Dit kunnen interdisciplinaire programma's zijn of filosofie van een wetenschapsgebied. Elk master programma heeft tenminste de volgende eindtermen:

#### Kennis en inzicht

- a. De afgestudeerde heeft verdiepende kennis in tenminste een van de specialisaties binnen de filosofie en eventueel basiskennis van een ander vakgebied, voor zover noodzakelijk binnen de opleiding (1);
- b. De afgestudeerde heeft inzicht in de rol en functie van filosofische vraagstukken in andere vakwetenschappen of in maatschappelijke vraagstukken en heeft de competentie om zelfstandig filosofische vragen formuleren, analyseren en oplossingen aandragen (2, 3);
- c. De afgestudeerde heeft inzicht in het arbeidsmarktperspectief en de rol die filosofen hebben op plekken in de samenleving (5).

#### Vaardigheden

- a. De afgestudeerde kan zowel wijsgerige vraagstukken in een bredere context zelfstandig benoemen, deze analyseren en bijdragen aan oplossingen alsook de relatie tussen de wijsgerige vraagstukken en de bredere context beschouwen (1, 2, 3, 4);
- b. De afgestudeerde kan schriftelijk verslag doen van een wijsgerige analyse op dusdanige wijze dat de analyse van de kwestie, het formuleren van het probleem en het oplossen ervan op heldere en systematische wijze aan bod komt (4);
- c. De afgestudeerde kan mondeling een onderwerp helder en gestructureerd presenteren en daarbij verschillende standpunten kritisch belichten (2, 3, 4);
- d. De afgestudeerde kan in de context van een vakwetenschappelijke of beroepspraktijk zelfstandig onderzoek verrichten en daarover rapporteren (4);
- e. De afgestudeerde kan op academisch verantwoorde wijze kennis op het gebied van de filosofie overbrengen op een niet-filosofisch of ander wetenschappelijk geschoold publiek (4, 5);
- f. De afgestudeerde kan zelfstandig een positie formuleren en beargumenteren en kritisch in discussie gaan met medestudenten, docenten of een breder publiek over een wijsgerig vraagstuk (3, 5);
- g. De afgestudeerde is in staat samen te werken met vakwetenschappers in andere disciplines en/of met professionals in het (maatschappelijk) beroepenveld (1, 5).

### 4. Profielbepalende elementen

De verschillende opleidingen in de filosofie bevat naast basiskennis in de drie grote hoofdgebieden in de voornaamste systematische deelgebieden van de filosofie ook profielbepalende elementen, waarbij eigen accenten worden gelegd. Deze profielbepalende elementen zijn in de masterprogramma's mogelijk nadrukkelijker aanwezig dan in de bachelorprogramma's, die vaak vooral breed en inleidend zijn. Deze elementen vertalen zich op eigen wijze in de eindtermen en het karakter van opleidingen. In alle gevallen is de profielbepaling van een opleiding helder beredeneerd en voor de student duidelijk.

#### A. Wijsgerige thema's

Binnen elke opleiding is de relatie tot onderzoeksgebieden en leerstoelen herkenbaar in het onderwijsprogramma. Cursussen worden vaak gevormd naar de expertise die zich heeft gevormd binnen een onderzoeksgroep of departement. Dit betekent dat in de ene opleiding er misschien een sterker accent gelegd kan worden op de Kantiaanse of Aristotelische traditie in de ethiek, terwijl een andere thema's als 'vrije wil' of 'taalfilosofie in de exacte wetenschappen' doordenkt. Voor elk bachelorprogramma geldt dat studenten tenminste in de volle breedte kennismaken met de filosofische hoofdgebieden (theoretische filosofie, praktische filosofie en geschiedenis van de filosofie) en kennis krijgen over de ontwikkelingen van aandachtsgebieden daarbinnen. Voor

masterprogramma's is 'research based teaching' meer vanzelfsprekend en is de aandacht voor bepaalde specialisaties in wijsgerige thema's groter.

#### B. Aandacht voor interdisciplinariteit en arbeidsmarkt

Afgestudeerde filosofen komen terecht in zeer diverse beroepen en sectoren: in de journalistiek, de academie, de uitgeverwereld, de zorg- en welzijnssector, het bedrijfsleven, de culturele sector, het management en het overheidsbeleid. De aandacht voor de arbeidsmarkt neemt in opleidingen toe; er worden stage mogelijkheden gecreëerd, Career Services helpen studenten zich voor te bereiden op de arbeidsmarkt en alumni worden meer betrokken bij opleidingen. Daarnaast geldt voor meerdere opleidingen dat vanuit met andere disciplines samengewerkt wordt. Dit vertaalt zich soms ook in het cursusaanbod (zoals interdisciplinaire opleidingen, gedeelde minoren, gedeelde bachelors). Voor elke opleiding, zowel bachelor als master geldt dat hier op eigen wijze invulling aan gegeven wordt.

#### C. Internationalisering

De opleidingen filosofie oriënteren zich, net als de overige activiteiten binnen de academische context, in toenemende mate op een internationale markt. Dit betekent dat het aantal Engelstalige programma's met name op het masterniveau zijn toegenomen en dat ook in bachelor programma's een verblijf in het buitenland, voor studie of stage, tot de mogelijkheden behoort. Het docententeam is steeds vaker internationaal georiënteerd en geschoold. In sommige opleidingen is het docententeam ook geschoold in het Engelstalig onderwijs (bijv. Cambridge certificaten). Studenten raken op verschillende wijzen betrokken bij deze internationaliserende context; van symposia en conferenties, tot en met buitenlandverblijven of onderwijs met internationale medestudenten. Studenten worden in bachelorprogramma's gestimuleerd zich internationaal te oriënteren. Voor masterprogramma's geldt dat zij op eigen wijze vorm geven aan internationale dimensies in het curriculum.



## APPENDIX 3: INTENDED LEARNING OUTCOMES

### **Final qualifications regarding knowledge**

The PSTS graduate has:

*K1* Extensive knowledge of the philosophy of technology, including its philosophical and STS approaches, and the ability to relate these approaches to each other.

*K2* Good knowledge of the various philosophical subfields, including ethics of technology, social and political philosophy of technology, philosophical anthropology of technology, epistemology and metaphysics of technology, and philosophy and history of (engineering) science and technology.

*K3* Good knowledge of approaches and themes in STS.

*K4* Good knowledge of empirical research methods in STS and philosophical research methods.

*K5* A basic understanding of the relation between the philosophy of technology, including its various subfields, methods and history, and general philosophy, including its various subfields, methods and history.

*K6* Specialist knowledge of a sub-domain or specialised topic within the philosophy of technology (broadly defined).

### **Final qualifications regarding skills**

The PSTS graduate has:

*S1* Writing and verbal communication skills.

*S2* Skills in reasoning and arguing and in the analysis of arguments.

*S3* Skills in locating, reading and analysing scientific texts from various disciplines in philosophy and STS, as well as professional and popular texts, that reflect on technology, engineering sciences, technological developments, and the relationship between technology and society.

*S4* Skills in the identification and analysis of problems related to the role of technology and science in society, and the ability to formulate a position with regard to these problems from a philosophical and/or STS perspective.

*S5* The ability to perform original scientific research in the field of philosophy of technology, using philosophical and/or STS methods. This includes the ability to arrive at a well-considered problem formulation, the selection and development of appropriate theories and (empirical) methodologies, and the proper execution of research.

*S6* Skills in the comparison of differing scientific approaches or paradigms in a sub-domain or specialised topic, the application of these approaches, and the ability to critically analyse them.

*S7* The ability to generate philosophical and/or STS research results that are relevant for scientific, technological, and/or social practices.

*S8* The capacity to communicate research results and solutions to colleagues, as well as professionals from other subject areas, and the ability to generate learning processes from that interaction.

*S9* Reflective capacity pertaining to one's own work, selecting or altering course, and the ability to translate learning trajectories into the development of more general knowledge and methods.

*S10* Capable to endeavour a career inside or outside of academia wherein philosophical and STS knowledge and skills are required.

## APPENDIX 4: OVERVIEW OF THE CURRICULUM

### PSTS Year 1

Semester 1		Semester 2	
Block 1 A	Block 1 B	Block 2 A	Block 2 B
Philosophy of technology 5 EC	Philosophy of Science in Practice 5 EC	TechnoLab 7 EC	
Science and Technology Studies 5 EC	History of Science and Technology Studies 5 EC	Philosophical Anthropology and Technology 5 EC	PhiloLab 3 EC
Philosophical Theories and Methods 5 EC	Ethics and Technology I 5 EC	Society, Politics and Technology 5 EC	Technology and Social Order 5 EC
Ethics and Technology II 5 EC			
Colloquia Year # 1 0 EC			

### PSTS Year 2 Semester 1

Profile	Semester 1	
	Block 1 A	Block 1 B
<b>Profile 1 Technology and the Human Being</b>	Philosophical Anthropology and Human-Technology Relations 5 EC	Philosophy of Mind and Body and Technology 5 EC
	Shaping Technology and Use 5 EC	Elective taken from another profile
	Elective taken from another profile 5 EC	
<b>Profile 2 Technology and Values</b>	Technology and the Quality of Life 5 EC	Assessment of Emerging Technologies 5 EC
	Technology, Globalization and the Environment 5 EC	Elective taken from another profile 5 EC
	Elective taken from another profile	
<b>Profile 3 Dynamics of Science, Technology and Society</b>	Philosophy of Science and Technology Relations 5 EC	Spatial and Temporal Dynamics of Science, Technology and Society 5 EC
	Dynamics and Governance of Socio-Technical Change 5 EC	Elective taken from another profile 5 EC

	Elective taken from another profile 5 EC	
<b>All profiles</b>	Master Lab 1 5 EC	
	Colloquia Year #2 0 EC	

**PSTS Year 2, Semester 2**

<b>Semester 2</b>	
<b>Block 2A</b>	<b>Block 2 B</b>
Academic Profile Master Thesis 30 EC Or Professional Profile Internship 10 EC Master thesis 20 EC	
Masterlab 2 (part of Master thesis)	
Colloquia year #2 0 EC	

## APPENDIX 5: PROGRAMME OF THE SITE VISIT

### Programme 11 May

### Cubicus B-205D (Business Room)

12.00-15.30 **Arrival panel, welcome (Jan Nelissen/Yvonne Luyten) and preparations (incl. lunch)**

15.30-16.15

#### **Programme management**

- Prof.dr. Ciano Aydin - programme director
- Dr. Marianne Boenink - coordinator external evaluation/visitation
- Jan Nelissen - programme coordinator
- Drs. Yvonne Luyten-de Thouars - study adviser

16.15-16.30

#### **Break**

16.30-17.15

#### **Students**

- Year 1
- Wietse Hage (NL)
- Patricia Reyes Benavides (INT)
- Alessio Gerola (INT)
- Anna-Carolina Zuiderduin (NL)
  
- Year 2
- Jan-Yme de Boer (NL)
- Michel Cents (NL)
- Ana Fernandez Inguanzo (INT)
- Sheila Lange (INT)

17.15-17.30

#### **Break**

17.30-18.15

#### **Alumni**

- Jerom van Geffen MSc - Board member Dutch Student Union
- Verna Jans MSc - PhD Maastricht University
- Laura Claas MSc - InnoValor – Consultant Digital Innovation
- Chirag Arora MSc- PhD Eindhoven University of Technology
- Tom van Eerde MSc - Entrepreneur/"Groene Hart Energie"
- Melis Bas - PhD University of Twente

19.00-21.00

#### **Dinner (panel)**

### Programme 12 May

### Cubicus B-205D (Business Room)

8.30

#### **Arrival panel**

8.30-9.00

#### **Preparations**

9.00-9.30

#### **Teaching staff**

- Prof.dr. Philip Brey - Profile coordinator Technology and Values / 4TU Scientific Chair
- Prof.dr.ir. Peter-Paul Verbeek - profile coordinator Technology and the Human Being Teacher Philosophy of Technology
- Dr. Kornelia Konrad - Profile coordinator Dynamics of STS, teacher Dynamics and Governance of Socio-technical Change and Assessment of Emerging Technologies
- Prof.dr.ir. Mieke Boon - TechnoLab



	<ul style="list-style-type: none"> <li>• Dr. Robert-Jan Geerts -Ethics and Technology-1/Technology, Globalization and the Environment)</li> <li>• Dr. Miles MacLeod - Philosophy of Science and Technology Relations</li> <li>• Dr. Michael Nagenborg - Philosophical Anthropology and Human-Technology Relations</li> <li>• Dr. Peter Stegmaier - PhiloLab</li> </ul>
9.30-9.45	<b>Break</b>
9.45-10.15	<b>Programme committee</b> <ul style="list-style-type: none"> <li>• Dr. Michael Nagenborg - chair</li> <li>• Dr. Marianne Boenink - previous chair</li> <li>• Dr. Koray Karaca - teacher</li> <li>• Dr. Kornelia Konrad - teacher</li> <li>• Emils Birkavs - student</li> <li>• Roos de Jong - student</li> </ul>
10.15-10.30	<b>Break</b>
10.30-11.00	<b>Examination board</b> <ul style="list-style-type: none"> <li>• Dr. Saskia Nagel - chair and PSTS representative</li> <li>• Drs. Tom Mulder - process advisor</li> <li>• Dr. Peter Stegmaier - member PSTS</li> </ul>
11.00-11.30	<b>Open consulting</b>
11.30-12.30	<b>Preparations for the final meeting with programme management and dean</b>
12.30-13.00	<b>Lunch</b>
13.00-13.30	<b>Programme management &amp; dean</b> <ul style="list-style-type: none"> <li>• Prof.dr. Ciano Aydin - programme director</li> <li>• Dr. Marianne Boenink - coordinator external evaluation/visitation</li> <li>• Jan Nelissen - programme coordinator</li> <li>• Drs. Yvonne Luyten-de Thouars - study adviser</li> <li>• Prof.dr. Theo Toonen – dean BMS</li> </ul>
13.30-15.00	<b>Composing preliminary findings</b>
15.00-15.45	<b>Developmental talk</b> <ul style="list-style-type: none"> <li>• Prof.dr. Ciano Aydin - programme director</li> <li>• Dr. Marianne Boenink - coordinator external evaluation/visitation</li> <li>• Dr. Michael Nagenborg - chair programme committee</li> <li>• Emils Birkavs - student</li> <li>• Roos de Jong - student</li> </ul>
15.45-16.00	<b>Break</b>
16.00-16.15	<b>Plenary, oral presentation of the preliminary results</b>

## 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:

1119494	1346946	0139513
1369857	0077623	1078399
1456717	1358316	1402773
0138371	1248618	0201162
1522671	0152188	0134112

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):

- Step by step Guide for teachers. Examination & Assessment.
- Academic Hitch Hiking augustus 2011. Tips voor studenten bij het maken van groepsopdrachten om meelifters te voorkomen.
- Education and Examination Regulations for Master Programmes
- Proces inzake toets screening. Uit step by step guide Testing & Assessment.
- Screening theses. Report to the Examination Board.
- Cursusinformatie Ethics and Technology 1 em 2 + gemaakt werk op usb stick.
- Philolab met de submitted papers
- Philosophy of Mind and Body and Technology. Grades, submitted papers, presentations
- Dynamics and Governance of Socio-technical change.
- Assessment of Emerging Technology + gemaakt werk op stick.
- PTST internship manual.
- Final Project Thesis Graduate Guide PTST.
- Programme guide 2016-2017.
- Minutes programme committee 2013-2016.
- Minutes Examination Board Interdisciplinary Studies 2013-2014.
- Annual Report Examination Board Interdisciplinary Studies 2013- 2014.
- Minutes Examination Board 2014-2015
- Annual Report Examination Board 2014-2015.
- Minutes Examination Board 2015-2016
- Annual report Examination Board 2015-2016.
- Rapportage doorlichting UT masteropleidingen.

## APPENDIX 7: REPORT OF THE DEVELOPMENT DIALOGUE

In addition to the formal site visit the panel had a development dialogue with the programme. A report of this meeting is attached as an separate annex to the printed and electronic version of the assessment report.