

### External Participants

The Graduate Research School accepts PhD students from institutions not affiliated with WTMC. The same requirements hold and the academic director will review the request in terms of its relevance to WTMC. Alternatively, external students can participate in workshops and summer schools on an ad hoc basis. Participants from affiliated institutions always have priority over external participants.

### Locations and Fees

The workshops and summer schools of WTMC are residential, at suitable conference centres. The locations have full board and usually offer a bar service. Locations are easily accessible by public transport. Each year, two workshops will be organised (in January and May), a summer school in early September, and two dissertation days (in March and October). The schedule may be modified depending on circumstances.

External students pay a fee for the workshops and summer schools in which they participate. Fees are calculated so as to correspond with what is paid by the affiliated institutions for the regular PhD students. External students who are members of EASST are entitled to a slight discount in the fee. PhD students who participate in groups affiliated with PRIME may be eligible for funding.

### Further Information

For information on the WTMC Graduate School and how to apply, please contact Hannie Spronck, administrator (hannie.spronck@fdcw.unimaas.nl)

For information on the programme of workshops, summer schools and dissertation days, please contact Els Rommes (e.rommes@pwo.ru.nl) or Sally Wyatt (sally.wyatt@vks.knaw.nl).

### Institutional Address WTMC

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# WTMC

Netherlands Graduate Research  
School of Science, Technology  
and Modern Culture

*Information about the training  
programme of the Graduate  
Research School*

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### Introduction

The Netherlands Graduate Research School of Science, Technology and Modern Culture (WTMC) is a collective effort of Dutch scholars studying aspects of the development of science, technology and modern culture. The history, sociology and philosophy of science and technology -science and technology- studies form the core of the work, but there are also strong inputs from cultural studies and innovation studies.

The activities of the School are twofold:

1. to co-ordinate and stimulate research in the field of science and technology studies;
2. to provide advanced training for PhD candidates. In the Netherlands, such Graduate Research Schools are an officially recognised element of the academic landscape. This brochure is meant specifically for those interested in the training programme.

### History

Some collaborative training for graduate students in science, technology and society studies started in 1986, and was supported by a government grant until the early 1990s. Over the years, the graduate training network gained national and international recognition. In 1994, the graduate training network was transformed into a slightly different organisation: the Graduate Research School of Science, Technology and Modern Culture (WTMC). The Graduate School was officially accredited by the Royal Netherlands Academy of Arts and Sciences (KNAW) in 1995. Accreditation has been reconfirmed in 2000, and in 2005.

### Organisation

At present, the academic director of the school is Professor Karin Bijsterveld from Maastricht University. Professor Nelly Oudshoorn, University of Twente, chairs the board. Most of the other board members come from participating academic groups. The co-ordination of the training programme is in the hands of Dr Sally Wyatt (Virtual Knowledge Studio – Royal Netherlands Academy of Arts and Sciences) and Dr Els Rommes (Radboud University Nijmegen).

### Participating Institutions

Maastricht University, University of Twente, Utrecht University, Free University of Amsterdam, University of Amsterdam, University of Groningen, Technical University of Delft, University of Leiden, Virtual Knowledge Studio (Royal Netherlands Academy of Arts and Sciences), Wageningen University and Research Centre.

## Research Clusters

WTMC is organised around three clusters of questions. These also form the backbone of the training programme. In addition to the clusters of key questions, the graduate school pays attention to its traditional disciplines, such as history, philosophy and sociology.

### Diagnosis of the Modern Research System

This cluster focuses on the history of national research systems, and on the relationships between the different levels of the research system, and between science and society. The formation of new networks, systems and actors is a key aspect within this theme. This is studied from historical, sociological and cultural approaches perspectives, using both quantitative and qualitative methods.

### Technological Development and Societal Regulation

This cluster focuses on the role of technology in society and the ways in which they are co-constructed. Key questions include: How do technical systems and technical artefacts emerge and develop? What is their role in modern society? These studies inform new perspectives on the politics of technological culture and new forms of technology assessment. The history of technology in the Netherlands has been an important topic.

### Cultural Roles of Science, Technology and Rationality

This cluster focuses on the cultural, philosophical and normative consequences of the intertwining of science, technology and modern culture. Questions related to this theme concentrate on the way in which boundaries between science, technology and society are generated, and how science and technology are represented and presented in philosophy and political writings.

## The Graduate Training Programme

### Aims of the Graduate Training

- To obtain an overview of classical and contemporary approaches to the study of the relations between science, technology and society.
- To learn how to translate these insights into one's own research approach and research design.
- To obtain insight into the relationship between current STS studies and disciplines such as philosophy, sociology and history.
- To develop skills to use methodology and theory to study the relation between science, technology and society.
- To develop skills necessary to communicate with and present one's work to the international research community.
- To develop skills to translate societal and cultural problems into questions of science and technology studies and vice versa.
- To prepare for a professional career in which knowledge of the relations between science, technology and society plays a role.

### Local and National Component

PhD students participating in one of the academic groups affiliated with WTMC obtain their training locally in their own institution and nationally from the Graduate Research School. The local component is provided by the local institution and in particular by the supervisor responsible for the PhD student. The local component includes supervision and the training to compensate for gaps in students' prior training, such as language skills. The national component is organised by the Graduate Research School WTMC. The national component aims to make students familiar with classical and recent theories, methodologies and approaches to studying the interaction between science, technology and society. It also stimulates interaction and learning among the PhD students of the School. In 2006, WTMC held its first Supervisors' Day to discuss issues of supervision, and to exchange best practices in supervision.

## Workshops, Summer Schools & Dissertation Days

The PhD programme has two parts. The first two years of the programme introduce students into the broad field of studies of the relationship between science, technology and society, and provide training in particular skills. During each of these first two years, students attend two workshops and one summer school. Workshops are organised around specific themes (linked to the three clusters of questions around which WTMC is organised), while the summer school is organised around both a theme and an anchor teacher. The anchor teachers are leading scholars from the field. Examples of these are provided in the boxes.

### Examples of Workshop Themes:

- Heterogeneous Practices of Knowledge Production
- User-Producer Relations in Technology
- Normativity as Object and Assignment
- Research Communities

### Anchor Teachers of Previous Summer Schools

- Donald MacKenzie (1987)
- Harry Collins (1988)
- Roy Porter (1989)
- Helga Nowotny (1990)
- Steve Shapin (1991)
- Bruno Latour (1992)
- Brian Wynne (1993)
- John Law (1994)
- Trevor Pinch (1995)
- Karin Knorr-Cetina & Ted Porter (1996)
- Donna Haraway (1997)
- Sheila Jasanoff (1998)
- Tom Gieryn (2000)
- Aant Elzinga (2001)
- Steve Woolgar (2002)
- Lucy Suchman (2003)
- Andrew Webster (2004)
- Tom Misa (2005)
- Susan Leigh Star (2006)

Prior to the workshops and summer schools students receive a reader with texts and assignments to prepare in advance. Students are expected to prepare 40 hours for each workshop and 80 hours for the summer school. All workshops and schools are in English and often attract international participants, partially through the PRIME EU-Network of Excellence. WTMC is one of the institutional members of this PRIME network. All students present their work at least once during the first two years of the programme.

In the next phase of their PhD research, students are enabled to present their own work for discussion at so-called dissertation days.

WTMC schedules two dissertation days per year, to which national, and occasionally international discussants are invited. PhD students are entitled to attend one dissertation day each year in order to present some work-in-progress, either a paper or a dissertation chapter. Texts are distributed in advance. The total amount of preparation depends on the number of participants. Each dissertation day ends with a dinner enabling PhD students to maintain and extend their network of contacts with peers and senior scholars in their field.

Acquiring academic and professional skills is highly important in the WTMC graduate training programme. Workshops and summer schools invite students to reflect critically on theoretical and methodological approaches and on their own research design and findings. Interaction among the students is crucial. That is why the workshops, summer schools and dissertation days are residential.

In addition to a selection of research skills (such as textual analysis, network analysis, and ethnographic techniques), there is training in skills such as structuring the thesis, writing review articles, composing abstracts for conferences, writing research proposals for funding, and the art of redrafting.

### Requirements for the Certificate of the National Component:

First phase PhD training:  
4 three-day workshops &  
2 five-day summer schools

Second phase PhD training:  
The 4 one-day dissertation days are a service to advanced students who have concluded the first phase. The dissertation days are not compulsory.

## Profile of Regular Participants

Participants should have a Masters degree, preferably in the study of science, technology and society or a degree with a sufficient basis in the social sciences and/or humanities. They must have been accepted as PhD candidate by a professor in a Dutch university (a professor with *ius promovendi*). Preferably, participants are already familiar with the key literature as defined by the WTMC Board (see classics). If not, participants are expected to read these classics in the first phase of the programme. Close reading exercises during workshops and schools will help them to do so.

## Classics

- Thomas S. Kuhn, 1970, *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press (2nd edition).
- Lewis Mumford, 1934, *Technics and Civilization*. New York: Harcourt, Brace, and World Inc.
- Ludwig Fleck, 1935, *Entstehung und Entwicklung einer wissenschaftlichen Tatsache. Einführung in die Lehre vom Denkstil und Denkkollektiv*. Basel Schwabe und Co. English translation, 1979: *The Genesis and Development of a Scientific Fact*. Chicago: University of Chicago Press.
- Karl R. Popper, 1963, *Conjectures and Refutations*. London: Routledge and Kegan Paul.
- Derek J. de Solla Price, 1963, *Little Science, Big Science*. New York: Columbia University Press
- Robert K. Merton, 1973, *The Sociology of Science: Theoretical and Empirical Investigations*. Chicago: University of Chicago Press, in particular chapters 3, 4 & 5.
- Michel Foucault, 1975, *Surveiller et Punir*. Parijs: Gallimard. Dutch translation 1989, *Discipline, Toezicht en straf: de geboorte van de gevangenis*. Groningen: Historische uitgeverij.
- Nathan Rosenberg, 1982, *Inside the Black Box: Technology and Economics*. Cambridge: Cambridge University Press.
- Bruno Latour and Steve Woolgar, 1986 [1979], *Laboratory life: The social construction of scientific facts*. London: Sage (2nd edition).
- Thomas P. Hughes (1983). *Networks of Power. Electrification in Western Society, 1880-1930*. Baltimore: Johns Hopkins University Press.
- Bruno Latour (1987). *Science in Action: How to Follow Scientists and Engineers through Society*. Cambridge, MA: Harvard University Press.
- Wiebe Bijker, Thomas P. Hughes & Trevor J. Pinch (Eds.) (1987). *The Social Construction of Technological Systems*. Cambridge, MA: MIT Press.
- Giovanni Dosi et al. (1988). *Technical change and economic theory*. London: Pinter