General introduction
The mechanical philosophy of the seventeenth century was an important, though relatively short-lived, episode in the history of science. This period saw the definite overturn of the Aristotelian world-view and the emergence of a new view of nature. To a large extent, this period defined what should count as a scientific explanation for the next centuries.
The mechanical ideas elicited huge controversies. Some people attacked them as irreligious or atheistical, others considered them as a defence of true religion. This raises questions about the relations between early modern science on the one hand, and the religious, social and political traditions in Europe on the other.
In this course we will investigate the debates which were waged at the time about the mechanical philosophy. That is, we will not just look into the scientific and philosophical arguments that were exchanged, but also at the political and religious issues that were behind. The subject can be divided into the following parts:
1. What was mechanical philosophy?
2. What were (apart from that) the main developments and debates in seventeenth-century intellectual culture?
3. How far did mechanical philosophers take parts in those debates or how far were their ideas used?
Hopefully, this will show us how far the new mechanical philosophy embodied specific religious or political values. A leading question might be how far mechanical philosophy tallied with the culture of absolutism and confessionalism of the seventeenth century. For philosophers like Hobbes and Descartes, mechanical philosophy contributed to a quest for unity and certainty. Absolutist monarchs actively promoted the new science, as Louis XIV did in establishing the Paris Academy of Sciences. On the other hand, mechanical thinking raised scepticism about many traditional beliefs.

Course mechanics
There are different kinds of essays to be asked.
1. In most cases, a specific question or a specific text will be assigned which they have to report on at the next meeting. These reports will be assessed for their content only, as sufficient or insufficient.
2. In other cases, students will be asked to present a more elaborate, formal essay. These essays have to be distributed preferably the Friday before class, but at least one day ahead. These essays will be formally graded. There are three such essays:
On 20 September, both students will present papers on "What is the mechanical philosophy", summarizing their findings so far. On 4 or 11 October, they should present a paper analyzing some of the problems of seventeenth-century intellectual culture and the possible role of mechanical philosophy therein.

Each student should present a paper during one of the meetings during the third section (debates on the mechanical philosophy). (Different students present at different dates.) In principle, they pick one of the topics assigned in the syllabus, although alternatives can be discussed. During the meeting, the subject will basically be presented by the student, not by the instructor. In consultation with the instructor, the student collects sources and literature. The essay is the basis for class discussion.

3. The students will write a final essay which they will present during one of the last classes on the general question of how we should see the role of mechanical philosophy in the intellectual debates of the time. They can incorporate their earlier work in this final essay (but of course they should include relevant comments and criticisms that have been made).

Class participation is 25 % of the course, the three formal essays in the middle of the course make up 50 %, and the final paper is 25 %.

Reading and discussion schedule
The schedule may be modified during the course. As a matter of fact, the division is often somewhat artificial. It is hardly possible to discuss laws without discussing miracles, or to discuss mechanical theories of life without bouncing into religious issues.

Aug 23 Introduction of main characters, sources and questions.

Section 1. What was mechanical philosophy?

30 Origins of the mechanical philosophy
What were the origins of the mechanical philosophy and why outdid it so quickly all its rivals in the replacement of Aristotelianism? There are various ideas on the origins of the mechanical philosophy. E.g., Lenoble regarded it as a reaction to "Renaissance naturalism"; Van Berkel emphasised the impact of Ramism; Popkin saw Cartesianism largely as reaction to a "sceptical crisis". The best way to enter these question is probably by investigating what are the differences and similarities with ancient atomism.

Rather than trying to cover everything, it seems preferable to study a few elements more in depth. I picked the elements of light, of physiology, life and the soul.

Sept 6 Mechanical theories of light
For Beeckman, the materiality of light was a cornerstone in his ideas. Descartes titled his (unpublished) first book *Le monde, ou traité de la lumière* (The world, or treatise on light). Hobbes' initial research was in
optics. On the other hand, light also had an allegorical meaning. "Natural light" was a cornerstone in Cartesian epistemics.

13 The soul in a mechanical universe
Descartes' natural philosophy occupied itself only with the material world. What remained of concepts like the soul? How did this affect later natural philosophy?

20 The problem of generation
First essay: what is mechanical philosophy?

Section 2. Seventeenth-century intellectual culture

27 Absolutism, confessionalism, and neo-scholastic philosophy

Oct 4 "Priestcraft"

Section 3. Debates around mechanical philosophy

11 General: supporters and detractors of mechanical, in particular Cartesian philosophy. (Voetius a.o.)

18 Combating superstition
Among the most prominent debates on mechanical philosophy were those on the meaning of comets, omens, astrology, etc. One might well ask whether the scepticism on these points was inspired by the new philosophy, or whether the new philosophy legitimized a scepticism already in existence.

25 The problem of atheism

Nov 1 General and particular laws
A fundamental presupposition of mechanical philosophy is that God acts by universal, not particular causes. How far did this hold outside nature as well? How far imposed the metaphor of "laws" more than just rules of nature?
Focal reading: Nicolas Malebranche, *Traité de la nature et de la grâce* (1680). (There is an English translation on line.)

8 Miracles
Miracles became a hot topic in the seventeenth century, in particular because of the work of Spinoza. In order to understand why that is so, we will also have to think about the function of miracles and the miraculous in religious and social life at the time.

15 Philosophers and the Bible
Dec 6 t.b.a.