

**Vak 2010-2011****Advanced Networking**

<b>Vakcode</b>	MINANW6
<b>Admin. code</b>	OWII
<b>Studielast</b>	6
<b>Periode(n)</b>	Semester 2 block 1, voertaal English
<b>Onderwijsinstituut</b>	Master School of Informatics
<b>Docent(en)</b>	dr. M.L. Cristea, mw. dr. P. Grosso, prof.dr.ir. C.T.A.M. de Laat (coördinator), prof.dr. R.J. Meijer en drs. R.J. Strijkers
<b>Onderdeel van</b>	Master's in Grid Computing

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**Leerdoelen**

The course will allow students to understand advanced networking concepts and the technologies that implement them. These recent developments in the field allow tuning network behaviour to extreme demands or situations. The student will be able to use these concepts in the laboratory hours, where we will deal with bandwidth consuming distributed applications and sensor networks.

**Inhoud**

This course teaches contemporary and advanced concepts for distributed computing and data communications. Extreme applications such as interplanetary telecommunications, globally distributed server farms and massive sensor networks require new networking approaches. The course covers optical networks, wireless sensor networks as well as related IETF developments in advanced networking. It explains the notion of network programming, where information technologies and data communications are integrated, and presents inspiring advanced use cases that illustrate this approach.

The course introduces systems theory, physics and computer programming concepts, which can be used to specify the dynamic behavior of individual network elements or their collective behavior.

The associated lab will give the students an opportunity to experiment with the presented concepts. Students will learn how to tune the performance and behavior of distributed computing applications. They will also gain hands-on experience with programmable sensor networks.

**Aanmelden**

Via <http://studieweb.student.uva.nl> - before start of the course with a possibility to 'switch' in the first three weeks.

**Onderwijsvorm**

Lectures and laboratory work (including a tour at AMS-IX and SURFnet Point Of Presence in the Science Park).

**Studie-materiaal**

All study material will be provided during the course.

**Toetsvorm**

The assessment is on basis of the lab assignments and a written examination.