

# Introduction to Programming on the GPU with CUDA

organized for

Researchers and Students (PhD, MSc)

February 3, 2012

The Graphics Processing Unit or GPU is used more and more for Scientific Computing. For relatively low costs one can obtain supercomputer performance. It appears however that some work has to be done to make an ordinary program suitable for use on the GPU. One of the important tools is the development of CUDA (Compute Unified Device Architecture). This is an extension of the C programming language, which can be used to program the GPU in an easy way. We recommend having a (rudimentary) understanding of a C-like programming language, such as C++, Java or similar. We also give some information about the OpenCL initiative.

In this 1-day course the basic principles are given to understand programming on the GPU and do it yourselves during a laboratory session. After this course you should be able to make simple CUDA programs which can be run on the GPU.

The number of participants is restricted to 20. This course is given every quarter.

**Teachers** Prof.dr.ir. Kees Vuik and Ir. Kees Lemmens

<b>Schedule</b>	09:15 - 09:30	Arrival, coffee, tea	
	09:30 - 09:45	Introduction	Kees Vuik
	09:45 - 10:30	Parallel computing in general	Kees Vuik
	10:45 - 11:30	Parallel computing on the GPU	Kees Vuik
	11:30 - 11:45	Coffee, tea	
	11:45 - 12:30	Programming on the GPU	Kees Lemmens
	12:45 - 13:30	Lunch	
	13:30 - 17:00	Laboratory session	Kees Lemmens

**Costs** For members of DCSE this course is free, TU Delft staff and students pay € 50,- for the lunch and course material. For other participants the costs are € 200,- (including lunch and course material).

**Registration** In order to attend this course please registrate at [www.aanmelder.nl/gpucourse2011/](http://www.aanmelder.nl/gpucourse2011/)

**Location** EEMCS building, Mekelweg 4, Delft. In the morning the lectures are given in the Snijders Room, LB 01.010, whereas in the afternoon the Lab session is in the Laboratory Room at the fifth floor.

**More info** <http://www.cse.tudelft.nl> Or contact Kees Lemmens: [C.W.J.Lemmens@tudelft.nl](mailto:C.W.J.Lemmens@tudelft.nl)