

UE GPU Computing



Niveau d'étude
Bac +5



ECTS
6 crédits



Crédits ECTS
Echange
6.0



Composante
UFR
Informatique,
mathématiques
et
mathématiques
appliquées
(IM2AG)



Période de
l'année
Automne (sept.
à dec./janv.)

Diplômes intégrant cet élément

- Master Informatique

- › **Langue(s) d'enseignement:** Anglais
- › **Ouvert aux étudiants en échange:** Oui
- › **Crédits ECTS Echange:** 6.0
- › **Code d'export Apogée:** GBX9AM49

Présentation

Description

In this course, we will introduce parallel programming paradigms to the students in the context of applied mathematics. The students will learn to identify the parallel pattern in numerical algorithm. The key components that the course will focus on are : efficiency, scalability, parallel pattern, comparison of parallel algorithms, operational intensity and emerging programming paradigm. Through different lab assignments, the students will apply the concepts of efficient parallel programming using Graphic Processing Unit. In the final project, the students will have the possibility to parallelize one of their own numerical application developed in a previous course.

1. Introduction to parallelism
2. Introduction to general context of parallelism
3. Models of parallel programming
4. Description of various model of parallelism

- 5. Paradigm of parallelism
- 6. Templates of parallelism
- 7. Parallel architectures
- 8. Programming tools: Cuda

Heures d'enseignement

CM	CM	18h
TP	TP	18h

Pré-requis recommandés

C or C++, Compiling, Data structures, Architecture, Concurrency

Syllabus

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Période : Semestre 9

Infos pratiques

Contacts

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Campus

➤ Grenoble - Domaine universitaire