

P6 – Scientific Programming

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Part #0

Organisational Stuff

Technical Details (1/2)

- The course consists of two parts
 - ▶ lecture (P6.1)
→ Tuesdays, 08:30 - 10:00
 - ▶ practical exercises (P6.2)
→ Mondays, 16:00 - 17:30
- Initially we will start with extra lectures on Mondays
- Successful completion of the course
 - ▶ requires **active participation**
 - ▶ passing an exam (graded)
 - ▶ is awarded with 6 ECTS credits



Technical Details (2/2)

- Practical part assumes that you are working under GNU/Linux.
- Reason: This is the operating system
 - ▶ on the machines in CIP pool
 - ▶ on 99% of Geophysics machines
 - ▶ on 99% of supercomputers
- We provide a 'virtual box' for you.
- This allows you to have a virtual Linux box on your computer.



Practical Exercises (1/2)

The current plan for the practical part of the course is the following:

- The 6 students will be split into **3 teams**:
 - ▶ two participants in each team
 - ▶ please choose partners by the end of this week
- The exercises will be done **asynchronously**:
 - ▶ You will find videos with a presentation of the sample solutions in Moodle/LMU Cast. **← watch before class**
 - ▶ The time-slot for the exercise class will be used for online discussions.
 - ▶ 30 minutes for each group in Zoom (one after the other).

Practical Exercises (2/2)

There will be three sorts of assignments

- for each student individually:
 - ▶ moodle quizzes
- group-based (will be corrected after upload by group)
 - ▶ written assignments → Moodle
 - ▶ programming assignments → Subversion

Contents (as planned)

- Primer on Computer Architecture
- Brief overview on History and Classification of Programming Languages
- Introduction into the C programming language
- Programming in a Linux environment
 - ▶ usage of compilers and editors
 - ▶ automated build process with makefiles
 - ▶ version control with subversion
- Data representation (integers and floats) and data structures
- Brief peek into HPC and the Message Passing Interface (MPI)

Questions?

