

Parallel Programming of High-Performance Systems

A collaborative course of NHR@FAU and LRZ
24 – 26 February 2026

Information

- **Topics covered include:**
 - HPC Introduction, Systems in Germany
 - Elements of OpenMP
 - Elements of MPI
 - Performance Pitfalls and Program Optimisation
 - Profiling Tools
 - OpenMP for GPU Programming
 - Outlook to Hybrid Parallel Programming
 - Working with HPC Clusters in Practice

- **Hands-On Session:**
Every day, interleaved with lectures

Lecturers

- Lecturers:

- Dr. Alireza Ghasemi (NHR@FAU)
- Dr. habil. Georg Hager (NHR@FAU)
- Dr. Sebastian Kuckuk (NHR@FAU)
- Dr. Volker Weinberg (LRZ)



Tentative Schedule (all Times in CET)

Day 1	
10:30 - 10:50	Welcome & Introduction (VW)
10:50 - 12:00	HPC Introduction, Systems in Germany (GH)
12:00 - 13:00	Lunch Break
13:00 - 14:45	Elements of OpenMP with Hands-on, Part 1 (VW)
14:45 - 15:00	Coffee Break
15:00 - 17:00	Elements of OpenMP with Hands-on, Part 2 (VW)

Tentative Schedule (all Times in CET)

Day 2	
09:00 - 11:00	Elements of MPI with Hands-On, Part 1 (AG)
11:00 - 11:15	Coffee Break
11:15 - 12:30	Elements of MPI with Hands-On, Part 2 (AG)
12:30 - 13:30	Lunch Break
13:30 - 15:00	Performance Pitfalls and Program Optimisation (GH)
15:00 - 15:15	Coffee Break
14:45 - 16:00	Profiling Tools (GH)
16:00 - 17:00	Hands-On: Profiling Tools (GH)
17:00 - 18:00	ISER
18:00 - 19:00	Pizza Talk: New Ways to Fool the Masses with Performance Results on Parallel Computers (GH)

Tentative Schedule (all Times in CET)

Day 3	
09:00 - 10:45	OpenMP for GPU Programming with Hands-On, Part 1 (SK)
10:45 - 11:00	Coffee Break
11:00 - 12:30	OpenMP for GPU Programming with Hands-On, Part 2 (SK)
12:30 - 13:30	Lunch Break
13:30 - 14:30	Outlook to Hybrid Parallel Programming (GH)
14:30 - 14:45	Coffee Break
14:45 - 15:45	Working with HPC Clusters in Practice (GH)
15:45 - 16:00	Wrap-Up & Adjourn

Course Webpage

- “Moodle” is a learning management platform at NHR@FAU
- <http://tiny.cc/PPHPS>
- Further information on:
 - Agenda
 - Slides
 - Exercises
 - Survey



Social Event: Pizza Talk

- Wednesday, 25 February, 18:00 – 19:00 CET
- Pizza Talk: “New Ways to Fool the Masses with Performance Results on Parallel Computers “ by Georg Hager
- Pizza from <https://pizzeria-mammamia-erlangen.de/>
- We will make a group order.
- Please note your selection until today 17:00 under <https://tinyurl.com/PPHPS26-pizza>
- Possibly pay via PayPal to hager.georg@gmail.com

And now ...

Enjoy the course!