

## Summer Semester 2023

### Introduction to Computational Physics (UKWR2)

**Lecturers: Ralf Klessen, Stefan Reißl, Rainer Spurzem**

zoom Online Lecture, Wed 9:15-11:00, Fri 11:15-12:00

zoom Online Tutorials, Mon/Fri 13:15 - 16:00; time change to 14-17 may be agreed upon with tutors;

Lecture and Tutorials will be offered in **English Language**.

### Lecture Time Plan – updated April 8

*Tutorial will appear Wednesday as given in the list - return is usually Friday of the following week. (All data are subject to change depending on progress of lecture)*

Wed 9.15	Fri 11.15	Tutorial Number	Spurzem	Klessen/ Reissl	Chapter-Number: Topic
19.4	21.4.	1		x	Introduction, 1-3: Practical Exercises
26.4	28.4.	2		x	4: <b>Ord. Diff. Eqs. I:</b> Two-Body, Euler Method
3.5.	5.5.	3		x	6: ODE II: Runge-Kutta (2,4,higher)...
10.5.	12.5.	4		x	5. <b>Linear Algebra I</b> / Matrices / Eigenvalues
17.5.	19.5.	5		x	5. LinAlg II / Householder / QR-QM, ...
24.5.	26.5.	6		x	5. LinAlg III quant. mech., Schrödinger-Eq.
31.5.	2.6.	-		x	5. LinAlg IV, continued
7.6.	9.6.	7	x		4.2, 4.3: ODE III: Population Dynamics I
14.6.	16.6.	8	x		4.3, * ODE IV: Pop. Dyn., Lorenz-Attractor
21.6.	23.6.	9	x		* ODE V: Lorenz-Attractor, Nonl. Dynamics
28.6.	30.6.	10	x		8: Random Numbers/Monte Carlo I
5.7.	7.7.	11	x		9: Monte Carlo II/Ising Model I
12.7.	14.7.	12	x		9: Ising Model II
19.7.	21.7.	-	x		Preparation/Repetition/Outlook Week
26.7.	28.7.	-			Exam Week (no lecture)

\*For ODE IV and V separate textbook material will be distributed.

**Note:** Public Holidays: May 1 (Mon), May 18 (Thu), May 29 (Mon), June 8 (Thu)

First Tutorial Sheet issued: Wed April 19, to be turned in Fri April 28.

Begin of Tutorials: Fri April 21 / Mon April 24.

Due to public vacation there will be no tutorial on Mondays May 1 and May 29.