

# Summer Semester 2022

## Introduction to Computational Physics (UKWR2)

**Lecturer: Rainer Spurzem**

**Lecture, Wed 9:15-11:00, Fri 11:15-12:00**

**Tutorials, Mon/Fri 13:15 - 16:00**

**Participants can choose Monday or Friday tutorial.**

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

### Lecture Time Plan

*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	Chapter-Number: Topic
20.4	22.4.	1	Introduction, 1-3: Practical Exercises/Mathematica
27.4	29.4.	2	4: Ord. Diff. Eqs. I: Two-Body, Euler Method
4.5.	6.5.	3	6: Ord. Diff. Eqs. II: Runge-Kutta (2,4,higher)...
11.5.	13.5.	4	5. Linear Algebra I / Matrices / Eigenvalues
18.5.	20.5.	5	5. Linear Algebra II / Householder / QR-QM, ...
25.5.	27.5.	6	5. Linear Algebra III quant. mech., Schrödinger-Eq.
1.6.	3.5.	-	5. Linear Algebra IV, continued
8.6.	10.6.	7	4.2, 4.3: Ord. Diff. Eqs. III: Population Dynamics I
15.6.	17.6.	8	4.3, Ord. Diff. Eqs. IV: Pop. Dyn., Lorenz-Attractor
22.6.	24.6.	9	Ord. Diff. Eqs. V: Lorenz-Attractor, Nonl. Dynamics
29.6.	1.7.	10	8: Random Numbers/Monte Carlo I
6.7.	8.7.	11	9: Monte Carlo II/Ising Model I
13.7.	15.7.	12	9: Ising Model II
20.7.	22.7.	-	Preparation Week (lecture?) Outlook
27.7.	29.7.	-	Exam Week (no lecture)

Relevant Public Holidays: May 26 (Thu), June 6 (Mon), June 16 (Thu)

First Tutorial Sheet issued: Wed April 20, to be turned in Fri April 29.

Begin of Tutorials: Fri April 22 / Mon April 25.

Due to public vacation there will be no tutorial on Monday June 6.