

# Summer Semester 2019

## Introduction to Computational Physics (UKWR2)

**Lecturers: Ralf Klessen, Rainer Spurzem**

**Location Wed 9:15-10:45, Fri 11:15-12:00, INF 227 KIP Hörsaal 2**

The Lecture will be offered in **English Language**.

### Lecture Time Plan

(subject to change depending on progress of lecture)

Wed 9.15	Fri 11.15	Tutorial Sheet	Spurzem	Klessen	Chapter-Number: Topic
17.4	—	1		x	Introduction, 1-3: Practical Exercises/Mathematica
24.4	26.4.	-		x	4: Ord. Diff. Eqs. I: Two-Body Problem, Elementary Euler
—	3.5.	2		x	6: Ord. Diff. Eqs. II: Runge-Kutta (2,4,higher) and more
8.5.	10.5.	3		x	5. Linear Algebra I / Matrices / Eigenvalues
15.5.	17.5.	4		x	5. Linear Algebra II / Householder / QR-QM, ...
22.5.	24.5.	5		x	5. Linear Algebra III quantum mechanics, Schrödinger-Eq.
29.5.	31.5.	6	x		6: Ord. Diff. Eqs. III: Population Dynamics / Stability I
5.6	7.6.	7	x		6. Ord. Diff. Eqs. IV: Lorenz-Attractor, Nonl. Dynamics
12.6.	14.6.	8	x		6. Ord. Diff. Eqs. V: Lorenz-Attractor, Nonl. Dynamics
19.6.	21.6.	9	x		8: Random Numbers
26.6.	28.6.	10	x		9: Monte Carlo method
3.7.	5.7.	11	x		9: Monte Carlo methods, Ising Model
10.7.	12.7.	-	x		9: Ising Model II
17.7.	19.7.	-	?	?	Preparation Week (lecture?) Outlook
24.7.	26.7.	-			Exam Week (no lecture)

Relevant Public Holidays: April 19 (Fri), May 1 (Wed), May 30 (Thu), June 20 (Thu)