

## Computational Methods in Condensed Matter Theory (T) - physics767

<i>Course</i>	Computational Methods in Condensed Matter Theory (T)
<i>Course No.</i>	physics767

Category	Type	Teaching			Semester
		Language	hours	CP	
Elective	Lecture with exercises	English	3+2	7	WT/ST

### Requirements for Participation:

#### Preparation:

Quantum Field Theory (physics755)

Advanced Theoretical Physics (physics607) / Advanced Quantum Field Theory (physics7501)

Advanced Theoretical Condensed Matter Physics (physics638)

**Form of Testing and Examination:** Active participation in exercises, written examination

**Length of Course:** 1 semester

**Aims of the Course:** Detailed discussion of computational tools in modern condensed matter theory

#### Contents of the Course:

Exact Diagonalization (ED)

Quantum Monte Carlo (QMC)

(Stochastic) Series expansion (SSE)

Density Matrix Renormalization (DMRG)

Dynamical Mean Field theory (DMFT)

**Recommended Literature:** will be given in the lecture

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