Mathematical Methods for Physicists
Comments

General

- The hand-in problems are a way to motivate your constant active participation in the course. Please note that we try to give you instructive problems, i. e. we do try to give you problems concerning the contents currently treated in the course which at the same time are relevant in physical applications. If you actively participate in the problem solving you will learn different techniques of great importance to theoretical physics.
- We are aware of the fact that solutions to most of the physically relevant problems can be found online, at least in a similar form. We strongly advice you to try solving the problems yourself and in discussion with your fellow students in the class. If you find inspirations in solutions stated somewhere else, please make sure you completely understand them and not just copy what you find since we put a lot of effort into statement and corrections of the hand-ins — so we expect you to take your share of the responsibility to achieve the best possible learning outcome from this course.

Technical

- Always state your *name* and the *hand-in number* on your hand-in and *staple* all the sheets together before you hand it in.
- There are *hard deadlines* for the problem sets to be handed in. This is because we want to have the chance to discuss connected material in class or problem solving sessions.
- If you skip a step in a calculation that we haven't explicitly asked for you have to give a *reference* (table in BETA, WolframAlpha, Mathematica, your neighbor...). We generally expect a *complete solution* with every step necessary for you to get to the results.
- If you introduce constants in your calculations (like integration constants) state their origin and what space they live on, e. g. "$c \in \mathbb{C}$". Generally: *Define* constants, variables and functions you introduce.
- Problems with a physical background do demand *physical reasoning*. If e. g. a parachutist with parachute opened hits the earth's surface at a vertical velocity of 100 km/h or flies against gravity upwards to infinity, then there is probably something wrong with your calculation. If there are more than one mathematical solutions but only one of them is of physical relevance, discuss this!
- Sometimes we ask for physical discussions and/or graphical representations of your solutions. They are then an important part of the task (and unfortunately often forgotten).
- Finally, if there is anything on the hand-ins you don't understand please do not hesitate to ask any instructor of the course for clarification.

Good luck with the problems!