

Books for the Course

This book [1] is for ordinary differential equation. There should also exist an English version in the net. For semigroup theory I recommend [4], [3], [2]. Similar this book <https://www.emis.de/monographs/Chueshov/book.pdf> This book [6] deals with the Navier Stokes equations. It gives a good introduction for function spaces and weak derivatives. Many examples for linear and nonlinear partial differential equations one can find in [5].

References

- [1] Herbert Amann. *Gewöhnliche Differentialgleichungen*. de Gruyter Lehrbuch. [de Gruyter Textbook]. Walter de Gruyter & Co., Berlin, 1983.
- [2] Klaus-Jochen Engel and Rainer Nagel. *A short course on operator semigroups*. Universitext. Springer, New York, 2006.
- [3] Alessandra Lunardi. *Analytic semigroups and optimal regularity in parabolic problems*, volume 16 of *Progress in Nonlinear Differential Equations and their Applications*. Birkhäuser Verlag, Basel, 1995.
- [4] A. Pazy. *Semigroups of linear operators and applications to partial differential equations*, volume 44 of *Applied Mathematical Sciences*. Springer-Verlag, New York, 1983.
- [5] George R. Sell and Yuncheng You. *Dynamics of evolutionary equations*, volume 143 of *Applied Mathematical Sciences*. Springer-Verlag, New York, 2002.
- [6] Hermann Sohr. *The Navier-Stokes equations*. Birkhäuser Advanced Texts: Basler Lehrbücher. [Birkhäuser Advanced Texts: Basel Textbooks]. Birkhäuser Verlag, Basel, 2001. An elementary functional analytic approach.