

Introduction to modular forms

Perspectives in Mathematical Science IV (Part II)
Nagoya University (Fall 2018)

Homepage for this course: <http://www.henrikbachmann.com/mf2018.html>.

- **Contact**

Name: Henrik Bachmann, Room: 457 (Math. Building).

You can visit me during my office hours: Thursday 12:00 - 13:00.

Email: henrik.bachmann@math.nagoya-u.ac.jp (feel free to ask any questions).

- **Lecture notes:**

I will provide lecture notes for the lectures which will be updated during the next weeks. You can find a preliminary version on the homepage. Please check the homepage regularly for updates. If you find any typos in the notes please let me know.

- **Lectures**

We will have four lectures: 10/30, 11/06, 11/13 and 11/20. At the end of each lecture, I will write on the homepage where we finished (in case you miss a lecture).

- **Exercises:**

There are 8 Exercises which need to be solved and hand in **until 24th December 2018**. The exercise sheet can be found on the homepage. You can hand in your solutions after the lectures, bring them to my office, put them in the post-box on the first floor or send them as a pdf via email at any time before the deadline.

- **Literature:**

There are various books on modular forms and lecture notes, which can be found in the library and online. Below you can find a list of standard books, which we will use during the lectures.

References

- [DS] F. Diamond, J. Shurman: *A first course in modular forms*, Graduate Texts in Mathematics, No. 228. Springer-Verlag, New York, 2005.
- [FB] E. Freitag, R. Busam: *Complex analysis*, Second edition, Universitext, Springer-Verlag, Berlin, 2009.
- [Ki] L. J. P. Kilford: *Modular forms. A classical and computational introduction*, Imperial College Press, London, 2008.
- [Ko] N. Koblitz: *Introduction to elliptic curves and modular forms*, Graduate Texts in Mathematics, No. 97. Springer-Verlag, New York, 1993.
- [L] S. Lang: *Introduction to modular forms*, Grundlehren der mathematischen Wissenschaften, No. 222. Springer-Verlag, Berlin-New York, 1976.
- [S] J.-P. Serre: *A course in arithmetic*, Graduate Texts in Mathematics, No. 7. Springer-Verlag, New York-Heidelberg, 1973. (Chapter VII)
- [SS] E. Stein, R. Shakarchi: *Complex analysis*, Princeton Lectures in Analysis, 2. Princeton University Press, Princeton, NJ, 2003
- [Z] D. Zagier: *Elliptic modular forms and their applications*, first part in "The 1-2-3 of modular forms", Universitext. Springer-Verlag, Berlin, 2008. (available at http://people.mpim-bonn.mpg.de/zagier/files/doi/10.1007/978-3-540-74119-0_1/fulltext.pdf)