Topic suggestions for project works in the course "Sobolev spaces"

1. Characterization of traces of $W^{1,p}(\Omega)$-functions by Besov spaces.
   Taken/Varattu

2. Interior regularity of solutions to elliptic PDE’s.
   Taken/Varattu

   Taken/Varattu

4. Fredholm’s alternative, Dirichlet eigenvalues and the spectrum of the Laplacian in bounded smooth domains.
   Taken/Varattu

5. Time dependent Sobolev spaces and the heat equation.
   Taken/Varattu

   Taken/Varattu

7. Differentiability of Sobolev functions, Rademacher’s theorem and absolute continuity along a.e. line.

8. Maximal functions and Sobolev spaces.


12. Maximum principles and elliptic PDE’s.


14. Fourier analysis methods in Sobolev spaces, $H^{1/2}$ and the trace theorem.

15. Sobolev spaces and second order parabolic equations.