

# General Guidelines for the Projects (Magnets)

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# Things that has to be done

1) What is the field you are trying to generate?

$$By = B_o + G \cdot x + \frac{S}{2} \cdot x^2$$

2) Obtain the pole profile expression.

3) Estimate the “unoptimized” pole overhang.

4) Define the coil. Justify your choices for the conductors.

5) For the field uniformity use  $\Delta B/B$ :

$$\frac{By_S - By_T}{By_T}$$

6) Try to reduce the pole width and create bumps to go from “unoptimized” to “optimized”.

# Tips

- Check your units. Be consistent with them.
- Check the boundary conditions.
- Check the polarity of your coils.
- Check the materials properties.
- Estimate the result and verify that it is correct.
- Optimize your mesh to refine the results.
- Simplify your model by removing unnecessary details.
- Don't use scripts.
- Refer to Manual/Help File.