

MAT360: Finite element methods (2019)

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Lecture Structure

- 1 Introduction. The idea of FE, FV and FD. The finite element method for one and two spatial dimensions.
- 2 The theory of the finite element method for linear elliptic boundary value problems of second order.
- 3 The finite element method for linear parabolic problems. Space-time finite elements.
- 4 The finite element method for nonlinear elliptic problems.
- 5 The mixed finite element method. The mixed hybrid finite element method.
- 6 Domain decomposition methods.

I will mainly use the book [14].

References

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