



## FALL 2025 COURSE ANNOUNCEMENT

### MAT 400: OPTIMIZATION

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**Instructor:** Peter Stechlinski  
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**Time:** MoWeFr 1:00 – 1:50 PM

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**Course Description:** An introduction to optimization theory and methods, with a focus on solving continuous optimization problems, i.e., necessary and sufficient optimality conditions for unconstrained and constrained optimization problems. Motivated by this aim, we will cover some basic concepts used in optimization (e.g., feasibility, duality, convexity). In addition to covering theoretical results, we will also consider optimization algorithms for solving these problems (previous experience in coding is not expected) and applications of optimization theory. In summary, we will investigate the following topics:

- Linear optimization
- Nonlinear optimization
- Convex optimization
- Duality
- Numerical methods for optimization
- Optimization in machine learning

**Prerequisites:** A grade of C or better in MAT 228 and (MAT 258 or MAT 262), or departmental permission.

Please reach out if you have any questions.

