Course Program

# Elliptic and Parabolic PDE: old and new

## by

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- **Introduction to elliptic partial differential equations**
- **Introduction to the fractional Laplacian**
- **Fractional heat equation**
- **Nonlocal problems in fluid mechanics**
- **Introduction to quantum problems**
- **The Schrödinger equation**
- **Dislocation dynamics and the Peierls-Nabarro model**
- **Some (non)local phase transition models**
- **Introduction to minimal surfaces**
- **Nonlocal minimal surfaces**
- **Some free boundary problems**

1 month to be precise.