The course develops core competency in high-level programming languages, primarily C and C++, using FE examples.

Computation:
- Introduction to C and C++
- Using Excel and VBA together with C++ programs
- Developing and working with DLLs
- Developing applications with graphical interfaces using MFC
- Multi-threaded programs and synchronization
- Working with binary files

FE:
- Cash flow matching problems
- Complete development of portfolio optimization models in C++
  * computing factor models for returns
  * optimization with a modern commercial solver
  * development of simple solver
- Trade execution models
  * implementing dynamic programming algorithms
  * robustness studies