**Course number and title:** B9122 (PhD) Computing For Business Research  
**Instructor:** Kriste Krstovski  
**Date and Time:** Thursdays, 4:15 - 7:00 PM  
**Location:** Warren Hall 416

**Course Description:** This course is designed to teach students essential concepts of computer programming and computational analytics that will be useful in carrying out research and other work. This work often involves:

- the gathering, organizing, and data analysis
- the use of numerical algorithms for analysis (e.g., regression, simulation, optimization, etc.)
- the generation and presentation of results using tables, graphs and reports

This course will prepare students to be able to correctly and efficiently carry out these tasks.

**Course Topics:**

- Through this course students will be able to learn programming concepts for research and other work.
- We'll give an overview and comparison of languages, tools and libraries such as Python, Bash, C, C++, Matlab, SQL, Visual Basic and advanced Excel, TensorFlow, etc.
- Principles of software design which include testing and debugging.
- You will also learn how to choose between and use available tools/platforms and analytic methods to complete computing tasks efficiently.
- We will also cover a breadth of computational techniques such as principal component analysis (PCA), k-nearest neighbors (k-NN), logistic regression, basic optimization and simulation, k-means clustering and neural networks.

**Course work:** The course will include weekly individual assignments.

**Prerequisites:** Prior programming experience is necessary to take this course. We will also assume that students have prior knowledge of basic linear algebra and statistics. We welcome students from all divisions and departments; Business school students will have priority when registering.