

Modelling and simulation for biomedical applications

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Alberto Valli

A study plan yielding competences in:

- mathematics
- scientific computation
- physics
- physiology

Applications in:

- medicine
- biomedical industry
- pharmaceutical industry
- sanitary services

- Fourier Analysis (6 credits)
- Statistical Models (6 credits)
- Mathematical Biology (9 credits)
- Theoretical Biomechanics (6 credits + 3 credits [2nd semester])
- Fisiologia Molecolare (6 credits) / Molecular and Cellular Biophysics (6 credits)

Total number of credits: 33 + 3 [2nd semester]

- Partial Differential Equations (9 credits)
- Numerical Methods for PDEs (6 credits)
- Scientific Computing (9 credits)
- Biomedical Imaging (6 credits)

Total number of credits: 30

- Computational Haemodynamics (9 credits)
- Mathematical Aspects of Bioelectromagnetism and Imaging (6 credits)

Total number of credits: 15

- Physiological Flow and Transport in Porous Tissues (6 credits)

Total number of credits: 6

- A suggested choice:
 - Biomedical Applications of Mathematics (3 credits; 1st semester)
- Language (3 credits)
- Thesis (30 credits) or Thesis+Internship (18+12 credits)

Total number of credits: 33–36