



# Quantitative Biology (qBio)



Composante  
Faculté des  
Sciences



Langue(s)  
d'enseignement  
Français,  
Anglais

## Parcours proposés

- > M1 - Quantitative Biology (qBio)
- > M2 - Quantitative Biology (qBio)

## Présentation

At the crossroads of Biology, Physics, Chemistry and Bioinformatics, *qbio* is the graduate program destined for students interested in studying Biology with a quantitative perspective founded on transdisciplinary approaches.

The *qbio* curriculum has been designed to be highly innovative in pedagogical terms. Discussions animated by the teachers, together with the observation and manipulation of real material and concrete difficulties will help the students to make the different subjects their own.

*Qbio* bases its foundations on practical project-based teaching units in the first year. The second year is focused on internships, communication and scientific writing. The background of different disciplines will be refreshed during the Bootcamp, an intensive teaching unit held at the beginning of the master.

For more information and a detailed description of the different courses, check out our website <https://qbio.umontpellier.fr>

## Objectifs

Ability to approach a biological system with a quantitative perspective, via either modelling/data analysis or state-of-the-art experimental approaches.

## Savoir faire et compétences

- \* Design, conduct and analyze an experimental plan in order to answer a specific biological question from a quantitative perspective
- \* Organize a scientific event
- \* Present a scientific project (oral presentation and written reports)

## Admission

### Public cible

Strongly motivated Biologists, Physicists, Biochemists, Mathematicians with a strong interdisciplinary attitude.

### Pré-requis nécessaires

Good knowledge of the basics of biochemistry, molecular biology, physics (mechanics, optics) and mathematics (complex numbers, derivatives,...).



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## Pré-requis recommandés

Basics of Python programming.

## Et après

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## Poursuite d'études

PhD in academic or private context (in France or abroad).

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## Insertion professionnelle

Private Biotech environment

qbio gives a solid scientific base for students interested in editorial, managerial or event planning careers.

## Infos pratiques

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## Contacts

### Responsable pédagogique

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### Responsable pédagogique

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## Lieu(x)

📍 Montpellier

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## En savoir plus

Site dédié au parcours

🔗 <https://qbio.umontpellier.fr/>

Site dédié au Master Biologie Santé

🔗 <https://masterbs.edu.umontpellier.fr/>



# Programme

## M1 - Quantitative Biology (qBio)

### M1S1 QBIO

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Biologie Structurale	5 crédits
Bootcamp	5 crédits
Synthetic Biology - Praticals	5 crédits
CHOIX 1	5 crédits
Statistiques appliquées à la biologie	5 crédits
Génomique fonctionnelle	5 crédits
Introduction to quantitative Biology	5 crédits
Imaging Biologicals Systems - Praticals	5 crédits

### M1S2 QBIO

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Applied Structural Biology	5 crédits
Practical Modelling and Simulation of Biological Systems	5 crédits
Stage_FDS	15 crédits
TER_FDS	5 crédits

## M2 - Quantitative Biology (qBio)

### M2S3 QBIO

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Workshop	5 crédits
CHOIX 1	10 crédits
Information Génétique - Epigénétique - Bases Mécanistiques	5 crédits
Physical Biology	
Signalisation : Méthodes et Concepts	5 crédits
Bioinformatics and System Biology	5 crédits
Integrative Pathophysiology	5 crédits
Lab_2	15 crédits

### M2S4 QBIO

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Scientific Writing	5 crédits
Lab_3	25 crédits