Welcome to the

Master of Quantitative Biology
Acknowledgement of Country

The University of Queensland (UQ) acknowledges the Traditional Owners and their custodianship of the lands on which we meet.

We pay our respects to their Ancestors and their descendants, who continue cultural and spiritual connections to Country.

We recognise their valuable contributions to Australian and global society.

The Brisbane River pattern from A Guidance Through Time by Casey Coolwell and Kyra Mancktelow.
QBIOL teaching team

A/Prof Jan Engelstaedter (Director)

Dr Simon Hart (co-Director)

Dr Simone Blomberg

Dr Andrew Letten

A/Prof Katrina McGuigan

Prof Daniel Ortiz-Barrientos

Prof Cynthia Riginos

Dr Tatsuya Amano
Why QBIOL?

• Biology has become increasingly quantitative
• Large amounts of data are now being produced:
  • Genome sequencing data and other "omics" data
  • Large ecological datasets, e.g. on species abundances
  • Digital images and videos
• Need to apply advanced mathematical, statistical and computational methods to make sense of those data
• High demand for quantitative skills on the job market!
QBIOL aims

• Become familiar with a range of techniques in quantitative biology:
  • Statistical modelling (linear and non-linear models)
  • Machine learning (unsupervised and supervised)
  • Construct and analyse mathematical models
  • Conduct computer simulations and use them for inference
• Make connections between mathematics, statistics, programming and biology
• Learn how to effectively communicate complex methods and results in quantitative biology
• Apply all those skills in research projects
QBIOL program structure (accelerated mode)

Semester 2

- QBIO7001
- QBIO7002
- QBIO7003
- QBIO7004
- QBIO7005
- QBIO7006

Semester 1

- QBIO7001
- QBIO7002
- QBIO7003
- QBIO7004
- QBIO7005
- QBIO7006

Winter

- QBIO7007 (6 units)
- QBIO7008 (4 units)

Semester 2

- QBIO7009 (4 units)

Foundational courses

Core courses

Research

Electives

Grad Certificate (8 units)

Diploma (16 units)

Master (24 units)

Master (32 units)
QBIOL program structure
(accelerated mode)

Many other options available, including full-time (2 years) and part-time study → The QBIOL program is very flexible!
Foundational courses

Quantitative Biology

BIOL7020
BINF6001
PUBH3010
PUBH7600
ENVM7001

MATH7050
MATH7861

CONS7008

[QBIO7001]

CSSE7030
INFS7900

Biology
Maths
Stats
Programming
QBIOL core courses  
(preview for Semester 1)

• Qbio7002: Multivariate Data Analysis & Machine Learning in Biology
  → Unsupervised and supervised machine learning methods

• Qbio7003: Dynamic Modelling of Biological Systems
  → Deterministic and stochastic mathematical models

• Qbio7004: Computational Methods in Biology
  → Computer simulations and computational inference methods

• Qbio7005: Statistical Modelling in Biology
  → Fitting statistical models to data

• Qbio7006: Science Communication in Quantitative Biology
  → Data Visualisation, Rmarkdown reports, GitHub, R packages
Most of the core course content can be accessed here: https://shire.science.uq.edu.au/QBIOL/

Master of Quantitative Biology Homepage
This page is your navigation tool for the course materials in your Master of Quantitative Biology degree. To find information regarding assessment items, go to the QBI0 Community blackboard page. To interact with your cohort and lecturers, use the dedicated QBI0 slack channel.
Communication: Slack

Communication platform with channels, threads, polls etc.
Activities at our School

• School Seminar series
• More specialized seminars (e.g., Centre for Marine Science)
• Socialising on the roof (Fridays)
• Postgraduate society

→ Watch out for emails from School and Postgrad mailing list!
Opportunities during your program

- Leadership and Mentoring Program in Science (LaMPS): Applications now open!
- Summer and Winter Research Scholarship program
- Clubs & societies - *Sign up on Orientation Day!*
- UQ Study Skills workshops
- UQ Get Involved volunteering
- Many more! Keep an eye out for the ‘Science Student Opportunities’ newsletter.
When you need support

Your courses
• Lecturers and tutors
• The School that administers the course (check the course profile!)
  - Questions about course content, including assessment

Your program
• Science Student Enquiries enquire@science.uq.edu.au:
  - Planning your program
  - Study options or timetable
  - Academic advice
  - General enquiries

Your wellbeing
• UQ Student Life student.services@uq.edu.au:
  - Health, wellbeing and counselling (free)
  - Diversity, disability and inclusion
  - Accommodation and Finances
  - Study skills and more.
Study/Learning Tips

• Keep track of important dates
  *Make a schedule at the start of semester so you know what is happening.*

• Try to stay up-to-date with your courses
  *Go through your course material on a regular basis to avoid content piling up at the end of semester.*

• PDFs of lecture slides are NOT complete notes
  *Listen to lectures and take your own notes.*

• Form study groups
  *Discuss content, explain it to each other. Practice answering mock exam questions together in groups.*

• Be prepared for class
  *Do the pre-readings/prep for pracs, journal clubs, tutorials, etc. It is way more efficient to learn in the moment than to try and pick it up later by yourself.*

• Ask questions
  • *When possible, attend lectures live (face-to-face or on Zoom) and ask questions!*
What’s next?

• Attend the Faculty of Science Welcome Session
  Gatton Campus – Thursday 20 July
  St Lucia Campus – Friday 21 July

• Visit the Orientation Website to register for O-Week events
  orientation.uq.edu.au
Questions?
Thank you

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Instagram.com/uniofqlrd