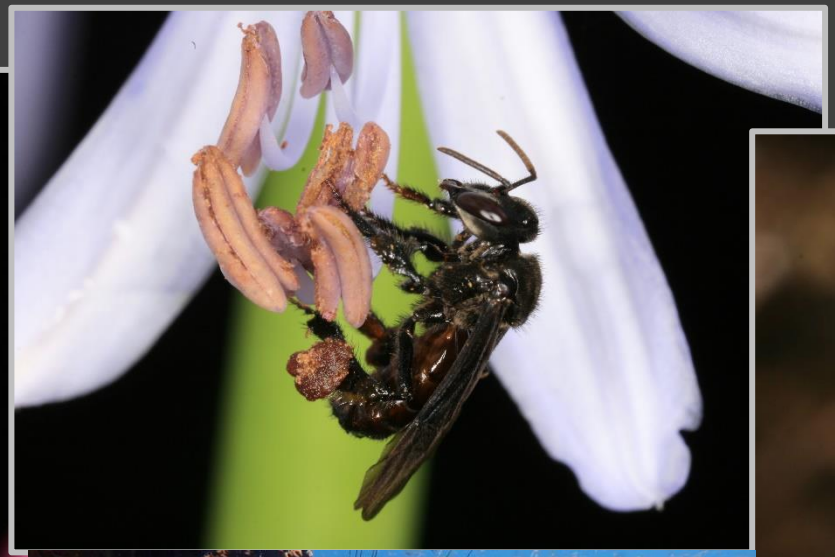
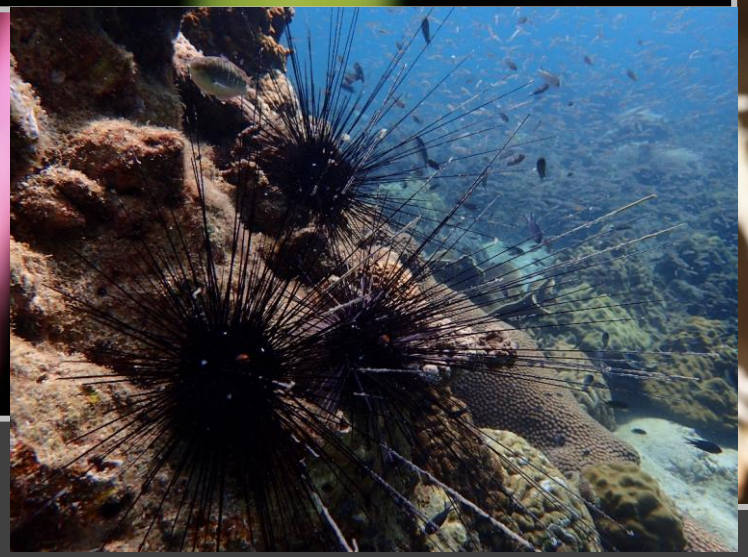
Ecology & Biodiversity

School of Biological Sciences



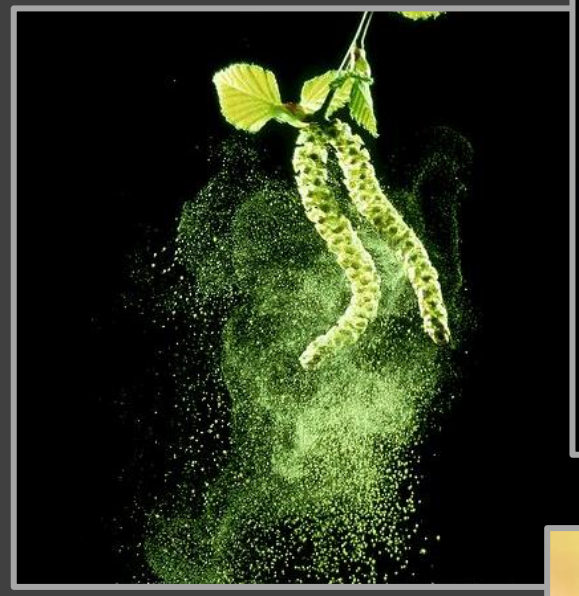


Bachelor of Science

Ecology & Biodiversity (Intensive, Major & Minor)

4-year curriculum

- Diversity of Life
- Interactions between species & their environment
- Regional & global threats on biodiversity



Why choose this major?

Interest in Science

Curious about biology, nature & conservation

Enthusiastic about exploring the natural world

- **lots of opportunities to get out there!**

Love fieldwork and/or laboratory work

- **Can also do data intensive projects**

Concerned about global environmental issues and protection of nature

What will you learn?

Broad knowledge in ecology, evolution and conservation

Skills to work independently & in team

Develop analytical and critical skills

Communication skills

Understanding of local & global environmental issues

1st Year

BIOL1110 From molecules to cells

BIOL1309 Evolutionary diversity

SCNC1111 Scientific method and reasoning

SCNC1112 Fundamentals of modern science

CCC

2nd Year

BIOL2102 Biostatistics

BIOL2103 Biological sciences laboratory course

BIOL2306 Ecology and evolution

ENVS2002 Environmental data analysis

CCC

29 core and elective courses

Small classes (12-30 students)

65% of courses with field components

4th Year

BIOL4991 Ecology & biodiversity project (12credits)

BIOL3991 Directed studies in ecology & biodiversity

BIOL4861 Ecology & biodiversity internship

BIOL4304 Ecosystem function & services (23-24)

BIOL4302 Environmental impact assessment

1st Sem.

2nd Sem.

Advanced Level

Capstone

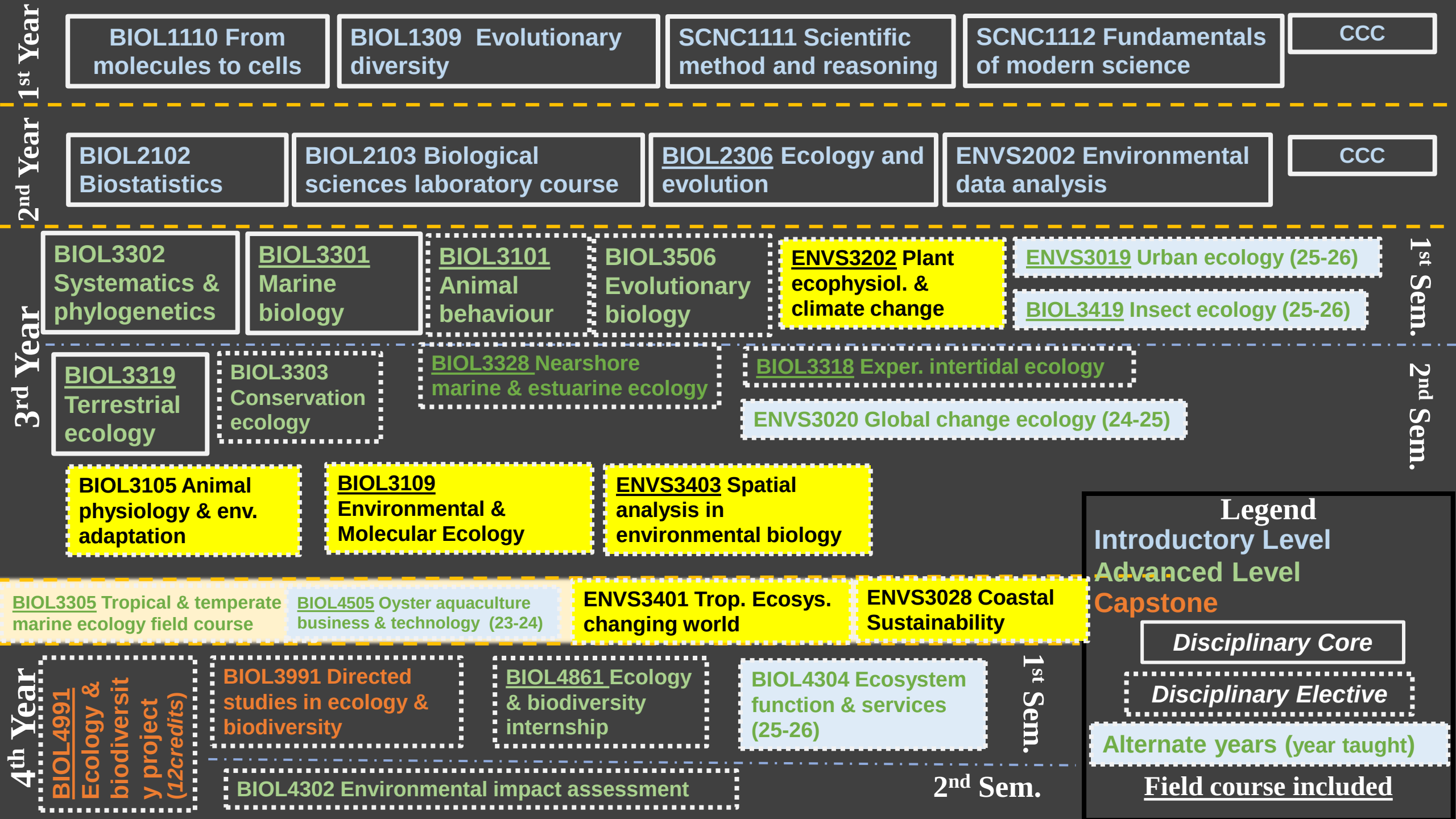
Disciplinary Core

Disciplinary Elective

Alternate years (year taught)

Field course included

6 new electives added from 2024/25!


1st Year
BIOL1110 From molecules to cells
BIOL1309 Evolutionary diversity
SCNC1111 Scientific method and reasoning
SCNC1112 Fundamentals of modern science
CCC
2nd Year
BIOL2102 Biostatistics
BIOL2103 Biological sciences laboratory course
BIOL2306 Ecology and evolution
ENVS2002 Environmental data analysis
CCC
3rd Year
BIOL3302 Systematics & phylogenetics
BIOL3301 Marine biology
BIOL3101 Animal behaviour
BIOL3506 Evolutionary biology
ENVS3202 Plant ecophysiol. & climate change
ENVS3019 Urban ecology (25-26)
BIOL3419 Insect ecology (25-26)
1st Sem.
BIOL3319 Terrestrial ecology
BIOL3303 Conservation ecology
BIOL3328 Nearshore marine & estuarine ecology
BIOL3318 Exper. intertidal ecology
ENVS3020 Global change ecology (24-25)
2nd Sem.
BIOL3105 Animal physiology & env. adaptation
BIOL3109 Environmental & Molecular Ecology
ENVS3403 Spatial analysis in environmental biology
BIOL3305 Tropical & temperate marine ecology field course
BIOL4505 Oyster aquaculture business & technology (23-24)
ENVS3401 Trop. Ecosys. changing world
ENVS3028 Coastal Sustainability
4th Year
BIOL4991 Ecology & biodiversity project (12credits)
BIOL3991 Directed studies in ecology & biodiversity
BIOL4861 Ecology & biodiversity internship
BIOL4304 Ecosystem function & services (25-26)
1st Sem.
BIOL4302 Environmental impact assessment
2nd Sem.
Legend
Introductory Level
Advanced Level
Capstone
Disciplinary Core
Disciplinary Elective
Alternate years (year taught)
Field course included

Intensive Major in Ecology & Biodiversity

Accredited degree by the

Royal Society of Biology

Intensive Major in Ecology & Biodiversity

- Diploma with increased international visibility & recognition
- Membership
  - Access to an international network of professionals
  - Discount on selected life science titles and professional development courses
- Accredited excellence in teaching and learning

Faculty of SCIENCE

4-YEAR Curriculum

Intensive Major in E & B

1. Introductory level courses (60 credits)

Science Foundation Courses (12 credits)

SCNC1111 Scientific method and reasoning
SCNC1112 Fundamentals of modern science

Disciplinary Courses (48 credits)

BIOL1110 From molecules to cells
BIOL2102 Biostatistics
BIOL2306 Ecology and evolution
EASC1401 Blue Planet

BIOL1309 Evolutionary diversity
BIOL2103 Biological sciences laboratory course
ENVS2002 Environmental data analysis
One chemistry course: CHEM1041 or 1042

Intensive Major in E & B

2. Advanced level courses (72 credits)

BIOL3301 Marine biology
BIOL3302 Systematics and phylogenetics
BIOL3319 Tropical terrestrial ecology
BIOL3101 Animal behaviour
BIOL3303 Conservation ecology

Plus at least 42 credits (7 courses) selected from the following categories:

(A) Genetics, molecular & cell biology (at least 6 credits):
BIOL3109 Environmental & molecular ecology
BIOL3408 Genetics

Faculty of SCIENCE

4-YEAR Curriculum

Intensive Major in E & B

2. Advanced level courses (72 credits)

(B) Ecology, systematics & evolution (at least 18 credits):

BIOL3305 Tropical & temperate marine ecology
BIOL3314 Plant structure and evolution
BIOL3318 Experimental intertidal ecology
BIOL3328 Nearshore marine & estuarine ecol.
BIOL3419 Insect ecology
BIOL3506 Evolutionary biology
BIOL4304 Ecosystem functioning & services
BIOL4861 Ecology & biodiversity internship
ENVS3019 Urban ecology
ENVS3020 Global change ecology
ENVS3401 Understanding tropical ecosystems in a changing world

Intensive Major in E & B

2. Advanced level courses (72 credits)

(C) Physiology and organismic biology (at least 6 credits):
BIOL3105 Animal physiology & environmental adaptation
ENVS3202 Plant ecophysiology & climate change

(D) Other disciplinary electives:
BIOL4302 Environmental impact assessment
BIOL4505 Oyster aquaculture: business & technology
ENVS3028 Coastal sustainability
ENVS3403 Spatial analysis in environmental biology
BIOL3506 Evolutionary biology

Intensive Major in E & B

3. Capstone requirement (12-18 credits)

Core capstone course

BIOL4991 Ecology & biodiversity project (12)

Elective capstone course (optional)

BIOL3991 Directed studies in ecology & biodiversity (6)

Total Intensive Major: 144 credits

For the most updated curriculum structure, please visit
https://webapp.science.hku.hk/sr4/servlet/enquiry?frmid=MenuP

Minor in Marine Biology

(36 credits)

Faculty of SCIENCE

4-YEAR Curriculum

Minor in Marine Biology

1. Introductory level courses (12 credits)

2. Disciplinary Courses (12 credits)

BIOL1309 Evolutionary diversity (6)
BIOL2306 Ecology and evolution (6)
ENVS1301 Environmental life science (6)

3. Advanced level courses (24 credits)

BIOL3301 Marine biology (6)
ENVS3313 Environmental oceanography (6)

Disciplinary electives 12 credits (2 courses) from the following:

BIOL3303 Conservation ecology
BIOL3305 Tropical & temperate marine ecology
BIOL3318 Experimental intertidal ecology
BIOL3328 Nearshore marine & estuarine ecol.

A diverse and international team

Pro
Evo

e
gy

18 World-class researchers

> 1000 publications in ecology & conservation

Dr. Benoit Guénard
Insect ecology

Dr. Alice Hughes
Biodiversity & conservation

Dr. Bayden Russell
Marine ecology

Prof. Rajan Vengatesen
Ocean acidification

A diverse and international team

Prof. Jula Merila
Evolution

Prof. Gray Williams
Intertidal Ecology

Dr. David Baker
Coral reef ecology

Prof. Tim Bonebrake
Global change ecology

Dr. Benoit Guénard
Insect ecology

Dr. Alice Hughes
Biodiversity & conservation

Dr. Bayden Russell
Marine ecology

Prof. Rajan Vengatesen
Ocean acidification

A diverse and international team

Dr. Moriaki Yasuhara
Deep sea ecology

Dr. Louise Ashton
Ecosystem function

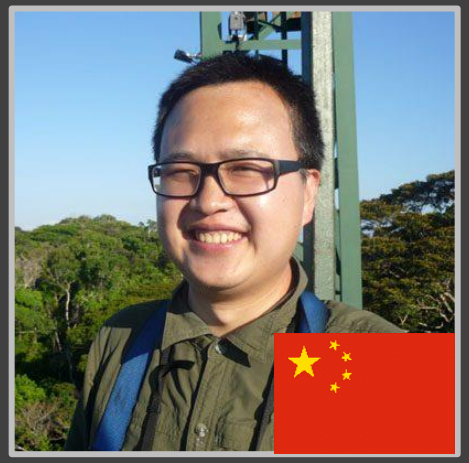
Dr. J. D. Gaitán-Espitia
Ecophysiology

Dr. Hannah Mumby
Behavioural ecology

Dr. Celia Schunter
Population genetics

Dr. Matthew Seymour
Environmental DNA

Dr. Simon Sin
Animal Behaviour



Dr. Jin Wu
Plant remote sensing

Dr. Billy Hau
Ecological restoration

Dr. Paolo Momigliano
Conservation genetics

BIOL2306 Ecology & Evolution

- **Introduction to the interaction between organisms and their environment and the central role of evolution**
- **Understand and explain the significance of nature using scientific methods**

BIOL2306 Ecology & Evolution

- **5 days field course!**
- **Study both marine and terrestrial ecosystems & organisms of Hong Kong**
- **Familiarize with scientific methods to study organisms and their environments**

Hands on learning

15 courses with field components offered

Tropical & temperate ecology

Terrestrial ecology

Marine & coastal ecology

Overseas field courses

- Australia
- Borneo
- Thailand
- Malaysia
- Philippines
- South Africa
- USA

Make an impact!

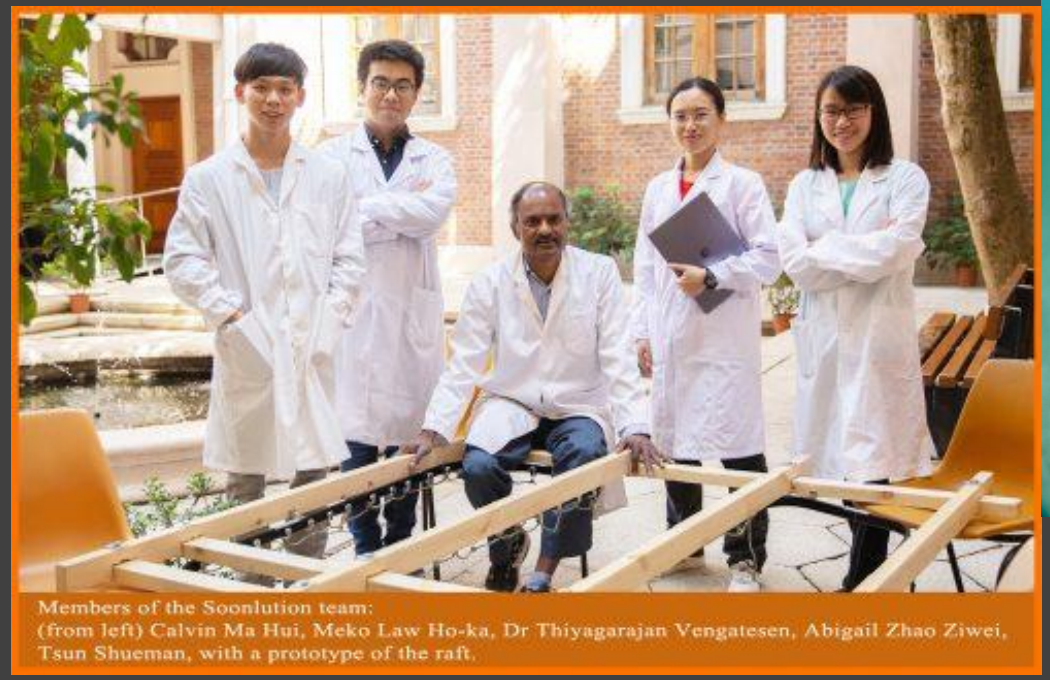
Many opportunities to engage into research as an undergraduate among one of > 20 laboratories!

Swire Institute of Marine Science

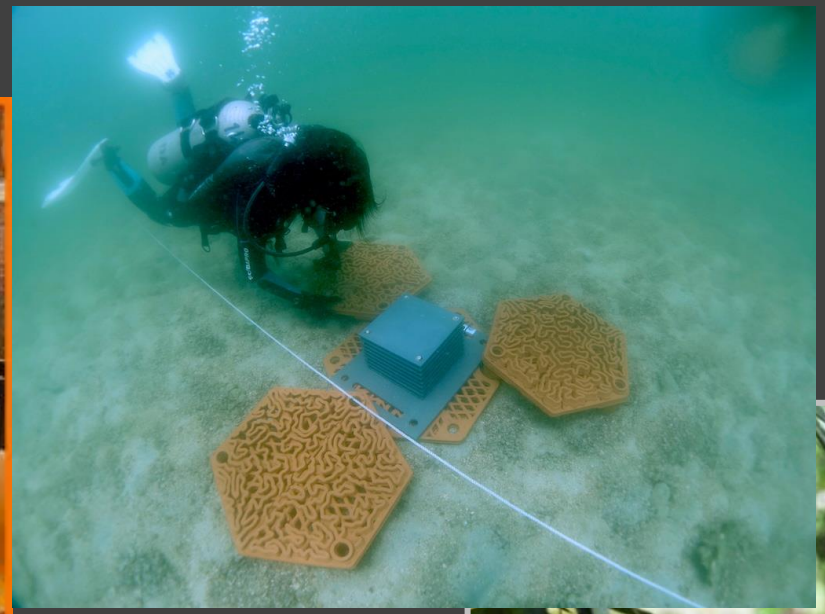
Kadoorie Centre

Make an impact!

Opportunities to engage with Government, industry, start-ups, commercial opportunities.

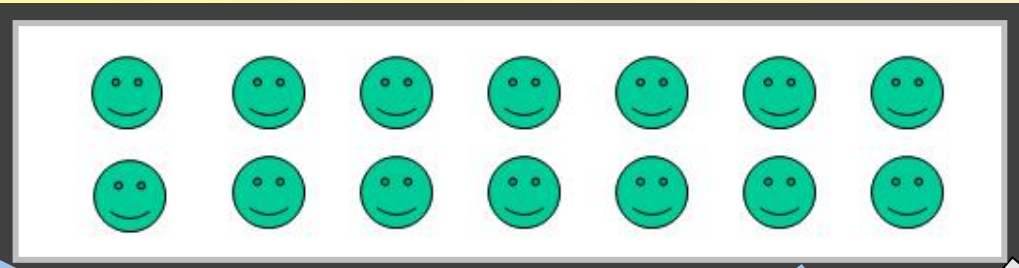


Members of the Soonlution team:
(from left) Calvin Ma Hui, Meko Law Ho-ka, Dr Thiyagarajan Vengatesen, Abigail Zhao Ziwei, Tsun Shueman, with a prototype of the raft.



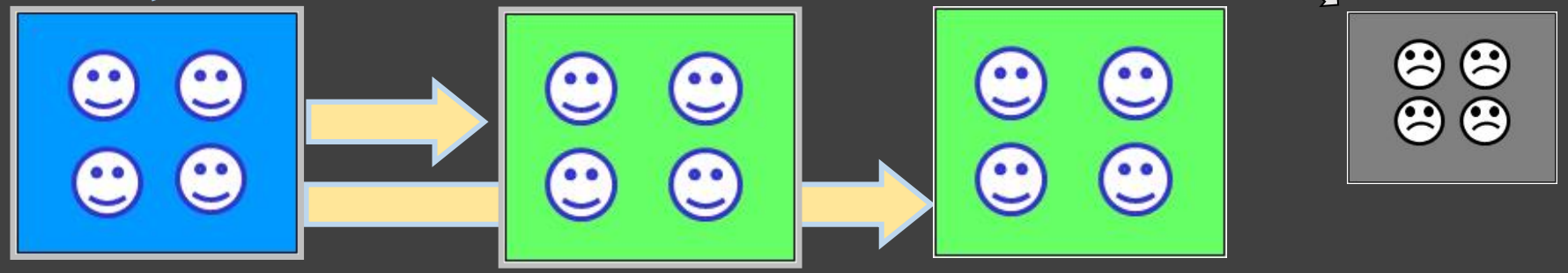
Building your future career

E&B students



100% employment after 6 months

Graduates



Further studies: MPhil, PhD, MSc, MLA…etc.

NGOs, Govt., private sector

Education

Jobs not related to research or conservation

Thank you!