

DATE	DAY	TIME	TOPIC/THEME	INSTRUCTOR
14TH JUNE	0	ALL DAY	ARRIVE. MEET OUTSIDE HOTEL FOR DINNER 6PM	
15TH JUNE	1	ALL DAY	ORIENTATION DAY	
			Meet for breakfast in the Market	8.30am
			Staff and student introductions, setting the context (cultural/ environmental/etc)	
			<i>Powerpoint slides from the students to introduce themselves, continue to afternoon if needed</i>	
			Garden tour	
			<i>Afternoon break-sample things from other countries, cultural exchange and interchange</i>	
			Course overview and introduction <i>Richard Corlett; Alice Hughes</i>	
		Evening	CELEBRATION and unofficial opening: Intercultural exchanges	
16TH JUNE	2		DAY THEME: CLIMATE CHANGE AND IT'S EFFECTS	
		am	official opening	9am
			9.00 Chen Jin <i>Director XTBG and CUBG</i>	
			9.05 Cao Jinghua <i>Deputy Director Bureau of International Cooperation</i>	
			9.10 William Yii-Been <i>National Science Foundation, USA</i>	
			9.15 Cynthia Louise Sagers <i>Associate Vice Provost for Research, University of Arkansas</i>	
			9.20 Richard Corlett <i>Director of the Centre for Integrative conservation</i>	
			10-12: L-Introduction to climate change Richard Corlett, Alice Hughes	
			<i>Lecture followed by Discussion on the implication of climate change for different ecosystems</i>	
			<i>Discussion: How and why our forests differ, how does it relate to climate</i>	
		pm	Oral histories overview	Julie Velásquez Runk
			Oral histories:	
			-developing a questionnaire and pooling the data	
			- look at changes in distribution and seasonality:	
		Evening	Oral histories: Discussion	
17TH JUNE	3		DAY THEME: UNDERSTANDING THE EFFECTS OF CLIMATE CHANGE	
		am	8.30-9.30	L-Plant migration and study including 20 min discussion Richard Corlett
			9.30-10.10	L-Herbaria and museums Alice Hughes

How do we use and access museum and herbaria collections in climate change research

10.30-11 L-Phenology Richard Corlett

Phenology and climate change

11_12 L-Animal migration, asynchrony, shifts and dispersal, range size Alice Hughes

Movement and migration under climate change

pm L-Climate change primer and methodologies-The physical side of climate change Delphine Farmer

Evening Delphine extra practical and discussion Delphine Farmer

18TH JUNE 4 DAY THEME: EXAMINING THE EFFECTS OF CLIMATE CHANGE

am Sap flow and climate change & fieldtrip Zafar Siddiq

Lecture and fieldtrip. Discuss the relevance of measuring sapflow to climate change

Pm Functional traits Yang Jie,

Lecture, then practical (using R) to look at community make-up relative to traits and phylogeny

Rethinking Functional traits-what to measure and why Yang Jie,

Evening: *Discussion on using botanic gardens to explore species ecophysiology, common gardens and botanic garden networks Alice Hughes*

19TH JUNE 5 DAY THEME: MEASURING THE EFFECTS OF CLIMATE CHANGE

am L- Monitoring climate: Flux towers, Gathering climate data at the local scale Tan Zhenghong, Delphine Farmer

Measuring different components of the environment, short practical

pm Estimating forest biomass stocks field exercise Jennifer Powers and Julie Velasquez Runk

Lecture followed by field visit and practical to natural forest

Evening REDD Julie Velasquez Runk

20TH JUNE 6 DAY THEME: LONG-TERM CHANGE (DEEP TIME)

am climate proxies (palynology etc.) Richard Corlett

Dendrochronology Fu Peili

Palynology lecture, dendrochronology lecture and practical

1_3 2xLectures (Methodology and outcomes) Frederic Jacques

3_5 Practical TRAIT and lab visits Frederic Jacques

5_6 discussion Frederic Jacques

Evening Discussion: How useful is palaeo data-how far back do we go? All
instructors for paleoclimate instructors and students from lab

21ST JUNE 7 DAY THEME: IMPACTS

am Element Cycling and You: linkages with carbon cycles and climate change

FLUX Tower visit Delphine/ Tan Zhenghong

pm 1_2 Manipulating the environment-FACE, OPENTOPS, Warming mini exercise Alice
Hughes

2_3 Fig wasp climate chamber experiment HuanHuan Chen and Alice Hughes (Needs to
start in early morning)

4_6 Discussion: What effect will climate change have on species with inter-relationships
(and discuss possible types of relationship) Alice Hughes

Evening Using the past to project the future (ecology) discussion Richard Corlett,
Alice Hughes

22ND JUNE 8 DAY THEME: CLIMATE MODELS

Am (until 2) Discussion: IPCC and "my forest: your forest" - Roger Kitching,
Richard Corlett

2-6pm Projections (Climate) -models, how are they built, Uncertainty, assumptions,
IPCC, calibrations, downscaling, - Models part 1 Xu Jianchu, Robert Zomer

Evening Models, scenarios and projections for climate change Xu Jianchu, Robert
Zomer

23RD JUNE 9 DAY THEME: REMOTE SENSING AND MODELS

am Environmental change Xu Jianchu, Robert Zomer, Alice Hughes

Phenology, GIS and planning the future of tree crops Xu Jianchu, Robert Zomer

pm Modelling part 2 Xu Jianchu, Robert Zomer, Alice Hughes, Sailesh Ranjitkar

Evening L+D-Climate change and demography Uromi Goodale and Alice
Hughes

Why age matters when thinking about climate change, Modelling for the future-what do different ages mean

**24TH JUNE 10 ALL DAY DAY THEME: CANOPY TOWER AND BUBANG VISIT ALL
INSTRUCTORS AND STUDENTS**

Using the FLIR, thermal forest profiles and why they matter

Evening L+D Collecting environmental data in the field-what to collect, and why.
(Alice will introduce this in the field) Alice Hughes

25TH JUNE 11 DAY THEME: CALCULATING CLIMATE CHANGE AND GIS

am **8.30-9.30 Scaling climate change in ecological studies-**Alice Hughes, Brett Scheffers
9.30-12.00-arboriality and discussion- Alice Hughes, Brett Scheffers

pm **1-2 thermal ecology 1 hour** Alice Hughes, Brett Scheffers
2-4 Nichemodeller practical-2 hours Alice Hughes,
4-6 Building databases, sourcing data Alice Hughes, Brett Scheffers

Evening **D-: Resource asynchrony-when seasonal events become out of sync with**
ecology Richard Corlett, Alice Hughes

26TH JUNE 12 DAY THEME: SPECIES DISTRIBUTIONS AND PHYSIOLOGY

am **Environmental gradients** Roger Kitching, Brett Scheffers, Alice Hughes

pm **Thermal ecology-what does climate really mean to species and what do we do with**
it-analysis, discussion. Alice Hughes, Brett Scheffers

Analysis from last two days, discussion of implications

Frank Sterck Wageningen University, Netherlands

evening **D-How useful are models to understand the effect of climate change** Alice
Hughes, Brett Scheffers

27TH JUNE 13 DAY THEME: SPECIES DISTRIBUTION MODELLING

am **P-SDMs-GIS: Using GIS in studies, designing studies which use GIS, practical**
Alice Hughes

pm **P-SDMs-GIS: Using GIS in studies, designing studies which use GIS, practical**
Alice Hughes

evening **L+D-What are you assuming: determining and dealing with assumptions**
Alice Hughes

28TH JUNE 14 DAY THEME: STATISTICS AND SPATIAL STATISTICS

All day **Statistics and Spatial statistics -getting meaningful results** Alice Hughes, Eben
Goodale, Kyle Tomlinson

Evening **Introduction to Yuanjiang Liu Jingxin**

29TH JUNE 15 DAY THEME: PROJECT DEVELOPMENT

am **Developing studies: The ecology of climate change (brief presentation + discussion)** Alice
Hughes, Eben Goodale, Kyle Tomlinson, Richard Corlett

10min presentation from each Instructor followed by discussion

Project development **All instructors**

pm **Present proposal and feedback** **All instructors**

Evening **Refine proposal with instructors** **All instructors**

30th June-5th July 16-22 All DAY YuanJiang (no instruction during travel days-rest on arrival)
ACH, Chen Yajun, RC, BS, LJS

6TH JULY 23 ALL DAY ADAPTATION AND MITIGATION Alice Hughes, Richard Corlett

7th-8th July 24 All DAY Data consolidation and analysis, write up ACH, Kyle, RC, BS, LJS

8th-10th July 25-27 All DAY Biophysics, ecophysiology and the carbon cycle Colin Prentice

11th 28 All DAY IPCC Report writing day: regional adaptation and mitigation priorities All instructors

12ND JULY 29 ALL DAY FINALISE PRESENTATIONS AND PRACTICE All instructors

Evening
Sophie Williams Climate change and climate change education-getting the message across

13-Jul 30 All DAY SYMPOSIA DAY-ALL STUDENTS TO PRESENT, followed by awards

14-Jul 31 Project development- How does each students research relate to climate change

15-Jul RETURN HOME

16-Jul RETURN HOME