

Synopse

**Erster Beschluss des Fachbereichs 08 – Biologie und Chemie - vom 26.04.2013
zur Änderung
der Speziellen Ordnung für den Master-Studiengang „Global Change: Ecosystem Science
and Policy“ des Fachbereichs 08 – Biologie und Chemie und der School of Biology and
Environmental Science des University College Dublin vom 27.07.2012**

I. In der Anlage 2 (Modulbeschreibungen) erhält der Modulplan folgende Fassung:

UCD	Core modules	Code	Credits
	Core Skills for Research	BIOL40010	5
	Plant-Atmosphere Climate Interaction	BOTN40180	5
	Global Change – Introduction	ENVB40130	5
	Science and <u>Policy Society</u>	BIOL40140	5
	Environmental Impact Assessment & Strategic Environmental <u>Assessment</u>	ENVB40040 <u>AESC4008</u>	5
	<u>European Environmental Policy</u>	<u>PEP40560</u>	<u>5</u>
	Optional modules		5
	a) Biodiversity	ZOOL40010	<u>5</u>
	b) Bioassessment of Freshwaters <u>Resources</u>	ENVB40120	<u>5</u>
	c) Peatland and Environmental Change	ENVB40040	<u>5</u>
	d) Public policy & Environment	PEP30140	
	e) Marine Population Biology	ZOOL40050	
	<u>d) Global Change and green issues</u>	<u>BIOL40110</u>	<u>5</u>
	Total CP in UCD for taught modules		<u>3530</u>

JLU	Core modules	Code	Credits
	Global Change – Advanced Techniques	M-GC-GCE	4
	Plant-Soil-Atmosphere Interactions	M-GC-PSA	<u>56</u>
	Ecosystem and Model development	M-GC-ÖUM	3
	Policy Consultancy	M-GC-PBR	6
	Resource Economics and Environmental Management	M-GC-REM	6
	Biodiversity Informatics	M-GC-BDI	3
	Palaeoclimatology	M-GC-PAL	6
	Optional modules		6
	a) Scientific Presentations in Ecology	M-GC-SEM2	<u>3</u>
	b) Evolutionary Biology	M-GC-EVO	<u>3</u>
	c) Climate Change <u>und Human</u> Food Security and Health	M-GC-CCH	<u>6</u>
	<u>d) Global Change – Advanced Techniques</u>	<u>M-GC-GCE</u>	<u>3</u>
	Total CP in JLU for taught modules		<u>3540</u>

Module 'Work Placement'	UCD	20
Module 'Research Project/Thesis'	UCD	30
Total Number of CP		120

II. In der Anlage 2 (Modulbeschreibungen) erhält das Modul Science and Society folgende Bezeichnung:

BIOL40140	Science and <u>PolicySociety</u>	Winter	5 CP
Title of module	Science and <u>PolicySociety</u>		
Code of module	BIOL40140		

III. In der Anlage 2 (Modulbeschreibungen) wird das Modul European Environmental Policy aufgenommen:

<u>PEP40560</u>	<u>European Environmental Policy</u>	<u>Winter</u>	<u>5 CP</u>
Title of module	<u>European Environmental Policy</u>		
Code of module	<u>PEP40560</u>		
Faculty / study program / Institution	<u>UCD, Geog, Planning & Env Policy</u>		
used in StG / Sem.	<u>1 Sem., MSc Global Change</u>		
Person in charge	<u>Dr Finbarr Brereton</u>		
Prerequisites	<u>None</u>		
Course aims	<p><u>On successful completion of the course, students will be able to:</u></p> <ul style="list-style-type: none"> • <u>Demonstrate advanced knowledge of the origin of EU Environmental Policy,</u> • <u>Demonstrate an advanced understanding of current EU Environmental Legislation,</u> • <u>Demonstrate knowledge of policy instruments that can be employed in relation to EU Environmental Policy,</u> • <u>Demonstrate knowledge of policy dilemmas caused by Climate Change and formulate policy responses to these problems,</u> • <u>Develop self-directed learning skills.</u> 		
Course content	<p><u>This module will comprehensively address European Union Environmental Policy under the following headings:</u></p> <p><u>i) The need for EU environmental Policy</u> <u>It will examine the background and context to EU Environmental Policy and determine when the environment became an EU concern and examine the influence of issues such as acid rain, Climate Change and CFCs in Ozone layer depletion as a precursor to Environmental Policy. Trans-Boundary issues will be examined where relevant (e.g. air pollution).</u></p> <p><u>ii) Environmental Legislation</u> <u>The module will then focus on legal basis for EU Environmental Policy, such as Treaties and the structure of DG Environment. It will also cover some of the specific environmental legislation that covers the following areas: Air Quality; Noise; Land use; Nature and biodiversity; energy; waste; water and how these policies fit with national policies.</u></p> <p><u>iii) Policy Instruments</u> <u>It will examine the types of policy instruments that can be employed in relation to EU Environmental Policy such as market based instruments (e.g. EU Emissions Trading Scheme, Environmental Tax Reform etc.)</u></p> <p><u>iv) EU Environmental Policy in a global context</u> <u>Finally, there will be a discussion of EU Environmental Policy in a global context and outline where the EU is leading the way in global terms in relation to Green Policy initiatives. This includes commitments under treaties such as the Kyoto protocol.</u></p>		
Class format	<u>Lecture and practice</u>		

<u>Workload</u>			<u>Credit-Points: 5 CP</u>		
<u>containing:</u>	<u>A Course</u>		<u>B Self-study</u>	<u>C examination</u>	<u>total</u>
	<u>a presence</u>	<u>b preparation/post processing, LN</u>			
<u>Lecture</u>	<u>24</u>				
<u>Specified Learning Activities</u>	<u>12</u>				
<u>Total</u>	<u>36</u>		<u>64</u>		<u>100</u>
<u>Examination format</u> <u>Grading</u> <u>Repetition</u>	<u>Assignment (25%), examination (75%)</u>				
<u>Availability</u> <u>Duration</u>	<u>Winter, each year</u> <u>one semester</u>				
<u>Acceptance capacity</u>	<u>None</u>				
<u>Language of instruction</u>	<u>English</u>				
<u>Literature</u>					
<u>Notes</u>					

IV. In der Anlage 2 (Modulbeschreibungen) wird das Modul Global Challenges and Green Issues aufgenommen:

<u>BIOL40110</u>	<u>Global Challenges and Green Issues</u>		<u>Winter</u>	<u>5 CP</u>	
<u>Title of module</u>	<u>Global Challenges and Green Issues</u>				
<u>Code of module</u>	<u>BIOL40110</u>				
<u>Faculty / study program / Institution</u>	<u>UCD, Biology & Environmental Science</u>				
<u>used in StG / Sem.</u>	<u>1 Sem., MSc Global Change</u>				
<u>Person in charge</u>	<u>Dr Jonathan Yearsley</u>				
<u>Prerequisites</u>	<u>None</u>				
<u>Course aims</u>	<u>On successful completion of the course, students will have a broad understanding of the contemporary Earth Science issues relating to energy, the environment, climate change and policy.</u>				
<u>Course content</u>	<u>A module that overviews global challenges, green issues, policy and the multidisciplinary research themes associated with the Structured PhD Programmes of UCD's Earth Institute (http://www.ucd.ie/earth). This module consists of a seminar series (roughly 15 seminars), given by leading figures from academia and the private sector. Each seminar will have associated reading material.</u>				
<u>Class format</u>	<u>Seminar</u>				
<u>Workload</u>			<u>Credit-Points: 5 CP</u>		
<u>containing:</u>	<u>A Course</u>		<u>B Self-study</u>	<u>C examination</u>	<u>total</u>
	<u>a presence</u>	<u>b preparation/post processing, LN</u>			
<u>Seminar</u>	<u>14</u>				
<u>Total</u>	<u>14</u>		<u>70</u>		<u>84</u>
<u>Examination format</u> <u>Grading</u> <u>Repetition</u>	<u>Multiple Choice Questionnaire: Multiple choice (100 %)</u>				

<u>Availability Duration</u>	<u>Winter</u> <u>This module will only run if numbers exceed 20. This will be confirmed in early October.</u> <u>The seminars will take place over 3 consecutive days at the end of the first semester (typically the 1st week in December).</u>
<u>Acceptance capacity</u>	<u>None</u>
<u>Language of instruction</u>	<u>English</u>
<u>Literature</u>	
<u>Notes</u>	

V. In der Anlage 2 (Modulbeschreibungen) entfällt das Modul Public Policy and Environment:

PEP30140	Public Policy and Environment	Winter	5-CP
<u>Title of module</u>	Public policy and environment		
<u>Code of module</u>	PEP30140		
<u>Faculty / study program / Institution</u>	UCD, School of Geography, Planning & Environmental Policy		
<u>used in StG / Sem.</u>	1 Sem., MSc Global Change		
<u>Person in charge</u>	Dr Mark Scott		
<u>Prerequisites</u>	None		
<u>Course aims</u>	<p>The capacity to develop environmental policy choices, to analyse them critically and to provide guidance in their implementation is one for which there is a growing demand. However, environmental policy and politics have become increasingly complex, reflecting a growing shift from government to governance, and characterised by increasingly complex economic, social and political changes, which have transformed the manner in which policy is made and delivered. These changes include an increasing acknowledgement of the multi faceted nature of public policy and administration, the inter-connectedness of policy decisions taken at the local, regional and international levels and the influence of multi-level EU governance, the increasing fragmentation of policy delivery and heterogeneous public service cultures. Within this context, this module addresses the interaction of politicians, experts, interest networks and citizens in the formulation of environmental policy. The module is divided into four components:- Part 1 Introduction to Environmental Policy: this will examine the emergence of the 'environment' as a concern for public policy, charting both the roots of environmental problems and also the emergence of environmentalism in 20th Century politics. This part of the module will also introduce students to key concepts in Environmental Policy, including sustainable development, the polluter pays principle, the precautionary principle, and environmental resilience. Part 2 Environment, Governance and Policy-Making: this will explore the nature of environmental policy making and problem solving. This will include an assessment of multi-level environmental governance and also provide analysis of the interplay of experts, politicians, markets and the public within the environmental arena. Finally, this part of the module will examine policy design and policy making processes, including the 'politics of environmental policy'. Part 3 Environment and Society: this will focus on the growing demand by citizens to be included in environmental policy processes, and will focus on issues related to social movements and green politics, social equity and environmental justice, and participatory policy approaches. Part 4 Environmental Policy Case Studies: this will explore examples of environmental policy in practice at a range of spatial scales, including climate change, the urban environment and local land-use conflicts.</p>		
<u>Course content</u>	<p>What will I learn? On successful completion of the module you should be able to: 1. Demonstrate an understanding of the political and public policy context for environmental policy; 2. Critically appraise concepts and theories surrounding policy making, accountability and representation within governance processes, and understand how these influence environmental policy; 3. Apply an understanding of the policy process to assess the nature and purpose of environmental policy; 4. Demonstrate an understanding of environmental citizenship and the role of public participation in</p>		

	environmental debates.				
Class-format	Lecture				
Workload					Credit-Points: 5-CP
containing:		A-Course		B-Self-study	total
		a-presence	b-preparation/post processing, LN		
	Lecture	22			
	Tutorial				
	Practical				
	Total	22		78	100
Examination format	2000 word assignment (25%) and examination (75%)				
Grading					
Repetition	In-semester assessment				
Availability	Winter, each year				
Duration	one semester				
Acceptance capacity	None				
Language of instruction	English				
Literature					
Notes					

VI. In der Anlage 2 (Modulbeschreibungen) entfällt das Modul Marine Population Biology:

ZOO40050	Marine Population Biology	Winter	5-CP
Title of module	Marine Population Biology		
Code of module	ZOO40050		
Faculty / study program / Institution	UCD, Zoology		
used in StG / Sem.	1 Sem., MSc Global Change		
Person in charge	Dr Jon Yearsley		
Prerequisites	None		
Course aims	<p>Aim:</p> <p>Nowadays, as 70% of the world's fisheries are over-exploited, many of which have undergone dramatic collapses, there is the urge for scientists, fishery managers and policy makers to take significant actions. The understanding of patterns of distribution, migration, life history and spatio-temporal structure of marine fish populations is key to our ability to manage and conserve declining stocks and their ecosystems. This is also fundamental for predicting evolutionary responses to continued harvesting and environmental change. This course covers the main aspects of the ecology and population genetics of marine fish, with particular focus on state-of-the-art methods employed for fish stock identification.</p>		
Course content	<p>What will the student learn?</p> <ul style="list-style-type: none"> — Awareness of the importance of understanding population structure and life histories in the marine environment; — Understanding the main problems associated with the study of marine fish populations; — Essential knowledge of applied population and ecological genetics; — Methods employed in the identification of fish stocks; 		

	<ul style="list-style-type: none"> - Basic techniques for presenting a research proposal in fish population biology. 					
Class-format	Lecture and practice					
Workload	Credit Points: 5 CP					
containing:		A-Course		B-Self-study	C examination	total
		a-presence	b preparation/post processing, LN			
	Lecture	10				
	Conversation class	3				
	Total	13		95		108
Examination format	2-essay-type questions to be chosen among 3 (2 hours) (80%), presentation of a grant proposal (20%)					
Grading						
Repetition						
Availability	Winter, each year					
Duration	one semester					
Acceptance capacity	None					
Language of instruction	English					
Literature						
Notes						

VII. In der Anlage 2 (Modulbeschreibungen) erhält das Modul Plant-Soil-Atmosphere Interactions folgende Fassung:

M-GC-PSA	Plant-Soil-Atmosphere Interactions	Summer	56 CP
Title of module	Plant-Soil-Atmosphere Interactions		
Code of module	M-GC-PSA		
Faculty / study program / Institution	08/ Biology/ Department of Plant Ecology		
used in StG / Sem.	2 Sem., MSc Global Change, MSc Biology		
Person in charge	Prof. Christoph Müller, PhD.		
Lecturers	Müller, Grünhage, Koyro		
Prerequisites	None		
Course aims	Students <ul style="list-style-type: none"> - have good knowledge of ecophysiology, System ecology and microbial ecology, - know the most important methods in autecology and synecology, - know matter of transformation processes and nutrient cycles on community and ecosystem level, - have the ability to organize on their own current scientific literature, - have the ability to plan ecological experiments, to interpret results and evaluate, discuss and present them adequately. 		
Course content	<ul style="list-style-type: none"> - Photosynthesis of plants and communities in relationship to abiotic factors and climate change (e.g. increasing CO₂ concentrations). - C and N transformations in terrestrial ecosystem (e.g. permanent grassland). - Energy fluxes in permanent grassland. - Interactions between vegetation and soil. - Statistical method in aut- and synecology. 		

Class format	lectures (25%), seminar (12.5 %), practical (62.5%)				
Workload	150 180 h			Credit-Points: 6 5	
containing:	A Course		B self-study	C examination	Total
	a presence	b preparation/post processing, LN			
	Lecture	20	20 37		
	Seminar	4	3 5		
	Practice	40	63 74		
Total	64	86 116			150 180
Examination format	Oral presentation (30%), report (100 70%)				
Grading					
Repetition					
Availability	Summer, each year				
Duration	one semester				
Acceptance capacity	None				
Language of instruction	English				
Literature					
Notes	Information concerning modules and literature: see board of information / Date: see university calendar				

VIII. In der Anlage 2 (Modulbeschreibungen) erhält das Modul Global Change: advanced techniques folgende Fassung:

M-GC-GCE	Global Change: advanced techniques	Summer	34 CP
Title of module	Global change ecology: stable isotopes and other advanced techniques		
Code of module	M-GC-GCE		
Faculty / study program / Institution	08/ Biology/ Department of Plant Ecology		
used in StG / Sem.	2 Sem., MSc Global Change		
Person in charge	Prof. Christoph Müller, PhD.		
Lecturers	Müller, Grünhage		
Prerequisites	None		
Course aims	Students will <ul style="list-style-type: none"> - have knowledge of current global change issues, - know the current methods for the investigation of global change effects on ecosystems, - have the ability to organize on their own current scientific literature, - have the ability to plan ecological experiments, to interpret results and evaluate, discuss and present them adequately. 		
Course content	<ul style="list-style-type: none"> - Current state-of-the-art scientific knowledge on Global Change Science (e.g. Paleoclimatology, Indicator-Proxies, current Trends, Intergovernmental Panel on Climate Change). - Quantification of global matter cycles using stable isotope based on the example of a permanent grassland. - Automated methods to quantify gas fluxes and the abiotic factors and their interactions that influence processes in permanent grassland. - Positive feedback effect of global change on biosphere processes (e.g. phenology). 		
Class format	lecture (25%), seminar (12.5%), practical (62.5%)		
Workload	90 120 h		Credit-Points: 3 4

containing:	A Course		B self-study	C examination	Total
	a presence	b preparation/post processing, LN			
	Lecture	10	16		
	Seminar	2	4		
	Practice	20	38		
	Essay				30
Total	32	58		30	90+20
Examination format Grading, Repetition	Oral presentation (30%), report (70-40%), essay (30%)				
Availability Duration	Summer, each year one semester				
Acceptance capacity	None				
Language of instruction	English				
Literature					
Notes	Information concerning modules and literature: see board of information / Date: see university calendar				

IX. In der Anlage 2 (Modulbeschreibungen) erhält das Modul Research Project Thesis folgende Fassung:

BIOLXXX BIOL40130	Research Project Thesis	Summer	30 CP		
Title of module	Research Project Thesis				
Code of module	BIOLXXX BIOL40130				
Faculty / study program / Institution	UCD, Biology				
used in StG / Sem.	3 Sem., MSc Global Change				
Person in charge	Dr Florence Renou-Wilson, Prof. Dr. Christoph Müller (chairman of examination board)				
Prerequisites	None				
Course aims	The research project is an important element of the Masters in Global Change as it involves the planning, execution and communication of a research question that the student wishes to investigate in depth. Students select individual projects from a list provided by the module co-ordinator, following consultation with the selected supervisor. During the third semester, a period of 16 weeks will be devoted entirely to the project work. Students will maintain regular contact with their supervisor, who will assist by guiding the project, reading and commenting on written work, and providing advice as necessary.				
Course content	What will the student learn? During the course of the research project, the student will: <ul style="list-style-type: none"> - develop independent research and organisational skills; - develop technical competence in the specific research area and learn to synthesise information and write a scientific report. 				
Class format	Research thesis				
Workload	600750 h	Credit-Points: 30			
containing:	A Course		B self-study	C examination	Total
	a presence	b preparation/post processing, LN			
	Autonomous student learning				600750

	Total			<u>600750</u>		<u>600750</u>
Examination format Grading Repetition	On completion of the research project the student will produce a mini-thesis in the format of a scientific paper, which will be graded by a supervisor and a second assessor. The format for grading will be as follows: Statement of problem & literature review (20%) Statement of aims and objectives (10%) Methodology (20%) Treatment of results (15%) Discussion (15%) Referencing/Bibliography (10%) Other (layout/formatting/proof-reading) (10%)					
Availability Duration	each year					
Acceptance capacity						
Language of instruction	English					
Literature						
Notes						

X. In der Anlage 2 (Modulbeschreibungen) erhält das Modul Work Placement folgende Fassung:

<u>BIOLXXXBIOL40120</u>	Work Placement	Summer	20 CP
Title of module	Work Placement		
Code of module	<u>BIOL40120</u>		
Faculty / study program / Institution	UCD, Biology		
used in StG / Sem.	1 Sem., MSc Global Change		
Person in charge	Dr Florence Renou-Wilson		
Prerequisites	None		
Course aims	This Masters programme offers students the opportunity to spend <u>minimum</u> 6 weeks in a real-life employment. The student will work in a setting that reflects his/her interests as an Environmental professional. Placements may vary considerably but in general terms the students will be placed in industrial, government, non-government or research environment where they will obtain a breadth of practical experience to complement their degree programme. Employers welcome 'transferable skills' acquired during a work placement such as communication, numeracy, use of IT, group work and time management to name but a few. The students will experience workplace culture making them more effective employee following graduation. The work experience is defined as a learning experience incorporating mentoring, professional supervision in which work is viewed from critical and evaluative perspectives much in contrast to the notion of routine or regular work.		
Course content	<p>What will the student learn?</p> <p><u>In terms of broad learning outcome, at the end of this module, the students will:</u></p> <ul style="list-style-type: none"> <u>-have increased their ability to relate academic theory to the work environment</u> <u>-have developed identified work related skills</u> <u>-be able to critically evaluate their learning from the placement</u> <u>-have enhanced their career knowledge</u> <u>-have planned, carried out, evaluated and reported on a project.</u> <p><u>In particular they should have acquired skills to be able to:</u></p> <p><u>From the Work Placement experience, the students should be able to:</u></p>		

	<p>-Evaluate the interaction between policies and the quality of the environment in its multiple biotic, abiotic and cultural-economic dimensions.</p> <p>-Describe some aspect of the environment which is impacted by global change and understand the implications and possible mitigation and adaptation measures.</p> <p>-Demonstrate an understanding of professional practice in some of the following areas: scientific analyst, policy adviser, researcher, environmental management industries.</p> <p>How will the student learn?</p> <p>Pre placement submission: This involves 1) <u>writing a CV and covering letters; 2) reflection on each application in terms of academic knowledge and related work skills; 3) analysis of skills to be gained while on placement (general knowledge and understanding; cognitive skills, subject specific skills, transferable skills)</u></p> <p>On placement: A 6 weeks contact time with employers is required. This involves 1) <u>a log book or diary to be sent to the module co-ordinator weekly and should be based on activities and what the student has learnt from the activities (most important focus); 2) a short report on the profile of the host (to get to know an employer).</u></p> <p>Post placement: This involves 1) <u>a final portfolio/report (whereby students should show how they have met the aforementioned learning outcomes) and 2) an oral presentation (15min with 5 min questions).</u></p> <p><u>The format of the final portfolio/report will be flexible depending on the skills a student may wish to develop but should incorporate observations, critical thinking, evaluation and research. It could be a typical report on a particular issue or on an aspect of the placement host (theme) or a draft paper (for publication).</u></p> <p>A minimum of 6 weeks contact time with employers is required. After the placement, students are required to submit a report (the format will be finalised depending on the skills a student may wish to develop) but should incorporate observations, critical thinking, evaluation and research.</p>					
Class format	Work placement					
Workload	400 h / 6 weeks minimum <u>contact time with employer</u>			Credit-Points: 20		
containing:		A Course		B self-study	C examination	total
		a presence	b preparation/post processing, LN			
	work placement	270				
	Report				90	
	Total	270		40	90	400
Examination format	<u>Log book (10 %), Report/final portfolio (50 %), seminar/presentation (40 %)</u>					
Grading, Repetition	no grade: fail or pass					
Availability						
Duration	6 weeks minimum contact time with employer- <u>2 weeks for report</u>					
Acceptance capacity	20					
Language of instruction	English					
Notes						