ECOTOXICOLOGY - Fall 2013

I. ECOTOXICOLOGY - The Chemical Players — QUE LAN

Specific Objectives (362-632)

September 3 - October 6, 2013

1) Important classes of naturally occurring toxins and man-made toxicants.
2) Factors influencing the distributin, transport and fate of toxins and toxicants in the
3) Similarities and dissimilarities between natural and synthetic toxicants and their impact on organisms.

2013 Date	Day	Lecture No.	Topic	Lecturer
4-Sep	W	1	Intro/Overview - Ecotoxicology: Individuals & Populations	Karasov
6-Sep	F	2	Research Seminar: Mycotoxins	Keller
9-Sep	M	3	Intro/Overview - Ecotoxicology: Communities & Ecosystems	Karasov
11-Sep	W	4	Natural Toxins	Karasov
13-Sep	F	5	Natural Toxins	Karasov
16-Sep	M	6	Research Seminar: Prions in the environment	Johnson
18-Sep	W	7	Antropogenic toxins and metals	Lan
20-Sep	F	8	Antropogenic toxins and metals	Lan
23-Sep	M	9	Transfer Processes Through Soil, Water, and Air	Pederson
25-Sep	W	10	Transfer Processes Through Soil, Water, and Air	Pederson
27-Sep	F	11	Research Seminar: TCDD (dioxin) as an environmental toxicant	Plavicki
30-Sep	M	12	Research Seminar: Organic contaminants/soil	Bleam
2-Oct	W		DISCUSSION	T.A.
4-Oct	F		EXAM-Module 1	T.A.

II. ECOTOXICOLOGY - Impacts on Individuals (362-633) — BILL KARASOV

October 7 - November 10, 2013

THE ORGANISMAL PERSPECTIVE BIOCHEMICAL AND PHYSIOLOGICAL MECHANISMS

Specific Objectives

1) General modes of action of toxicants affecting organisms.
2) Mechanisms of organisms that defend against natural and synthetic toxicants, and the consequences of these of species selective action of toxicants.
3) Similarities and dissimilarities between natural and synthetic toxicants and their impact on organisms.

2013 Date	**Day**	**Lecture No.**	**Topic**	**Lecturer**
7-Oct	M	1	Overview & General Principles of absorption/distribution/ toxicokinetics	Karasov
9-Oct	W	2	Absorption/Distribution/Toxicokinetics - Animals	Karasov
11-Oct	F	3	Detoxication Mechanisms - Animals	Karasov
14-Oct	M	4	Detoxication Mechanisms - Animals	Karasov
16-Oct	W	5	Absorption/Distribution/Toxicokinetics - Plants	Stoltenberg
18-Oct	F	6	Detoxication Mechanisms - Plants	Stoltenberg
21-Oct	M	7	DISCUSSION	TA's
23-Oct	W	8	**Research Seminar**: Plants as Bioremediators and Monitors of Toxins	Hickey
			Research Seminar: Absorption/Distribution/Elimination and	Karasov
25-Oct	F	9	Toxicodynamics of PCBs in Frogs or Methyl Hg in Loons	
28-Oct	M	10	Ecotoxicology - Impacts on Behavior	Students
30-Oct	W	11	Ecotoxicology - Impacts on Reproduction	Students
1-Nov	F	12	Ecotoxicology - Impacts on Growth and Development	Students
4-Nov	M	13	Ecotoxicology - Impacts on Energetics	Students
6-Nov	W		DISCUSSION	T.A.
8-Nov	F		EXAM - Module 2	

III. ECOTOXICOLOGY - Impacts on Populations, Communities, and Ecosystems (362-634) — **Que Lan**

November 11 - December 13, 2013

1) Impacts of toxicants on population dynamics, community organizatin, and ecosystem
2) Effects of toxicants on the population genetics and evolution of biological systems.
3) The evaluation of risks and the relevance and importance of ecotoxicology for socio-economic concerns.

2013 Date	Day	Lecture No.	Topic	Lecturer
			Population Ecotoxicology	
11-Nov	M	1	Responses of Populations to Environmental Stress	Van Deelen
13-Nov	W	2	Effects of Toxicants on the Dynamics of Populations	Van Deelen
15-Nov	F	3	Detecting Population-Level Effects of Toxicants	Van Deelen
18-Nov	M	4	Epidemiological Approaches to Studying Environmental Toxicants	Van Deelen
			Evolutionary Ecotoxicology	
20-Nov	W	5	Chemically Mediated Evolution and Coevolution	Lan
22-Nov	F	6	Evolution of Pesticide Resistance	Lan
			Community and Ecosystem Ecotoxicology	
25-Nov	M	7	The Community/Ecosystems Perspective in Prediction and Monitoring	Karasov
27-Nov	W	8	The Community/Ecosystem Perspective in Predicion and Monitoring	Karasov
29-Nov	F		NO CLASS - THANKSGIVING RECESS (11/28-29/13)	
2-Dec	M	9	Risk Assessment and Uncertainty Analysis	Thiboldeaux
4-Dec	W	10	Risk Assessment and Uncertainty Analysis	Thiboldeaux
6-Dec	F	11	Assessing Risks to Wildlife Populations from Multiple Stressors	Meyer
9-Dec	M	12	Research Seminar: Broad biological consequences of very low level chemical exposures	Porter
11-Dec	W		DISCUSSION	T.A.
13-Dec	F		EXAM - Module 3	

TEACHING ASSISTANTS
Cherry Tsai/ Justin Clements