

CATALOG INFORMATION

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Dept & Nbr: BIO 245 Title: INTRO TO ENVIRO TOXIC

Full Title: Introduction to Environmental Toxicology

Units	Course Hours	Per Week	Nbr of Weeks	Course Hours	Total
Max: 3.0	Lecture	3.0	17	Lecture	51.0
Min: 3.0	Lab	0.0		Lab	0.0
	Contact DHR	0.0		Contact DHR	0.0
	Contact Total	3.0		Contact Total	51.0
	Non-contact DHR	0.0		Non-contact DHR	0.0

Title 5 Category: 01 AA Degree Applic
Grading: GC Credit course for grade or CR/NC
Repeatability: 00 No repeatability allowed or defined
Also listed as:

CATALOG DESCRIPTION:

This course will cover diverse topics in toxicology, ranging from the cellular level to the ecosystem. This course will provide an overview of the biology of toxic substances, as well as an introduction to toxicological and environmental processes. Case studies will be analyzed to study how the scientific method is used to determine toxicological effects on individuals, populations and ecosystems

PREREQUISITES:

COREQUISITES:

RECOMMENDED PREPARATION:

No advisories.

LIMITS ON ENROLLMENT:

SCHEDULE OF CLASSES INFORMATION:

This course will cover diverse topics in toxicology, ranging from the cellular level to the ecosystem. This course will provide an overview of the biology of toxic substances, as well as an introduction to toxicological and environmental processes. Case studies will be analyzed to study how the scientific method is used to determine toxicological effects on individuals, populations and ecosystems. (Grade or CR/NC)
Transfer Credit: CSU; UC.

ARTICULATION and CERTIFICATE INFORMATION

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ASSOCIATE DEGREE: Effective: SPRING 2008 Inactive:
Area: A NATURAL SCIENCES

- Case study: Mad Hatters, Love Canal
9. Distribution and Phase I Metabolism: how does a toxin spread through your body and how does your detoxification system deal with this?
Case study: Botox
 10. Phase II Metabolism: further detoxification
Case study: Pesticide residues
 11. Excretion
Case study: Acetaminophen overdose
 12. Genetic and Reproductive Toxin, Teratology (birth defects)
Case study: Thalidomide, DES
 13. Carcinogens, Respiratory, Digestive and Skin Toxins
Case study: Cigarettes
 14. Neurotoxicity, Hepatotoxicity, Endocrine Disruptors
Case study: Peanut butter and Lake Apopka
 15. Biogeochemistry, Biomagnification, Endangered Species
Case study: Clear Lake
 16. Global Warming, Invasive Species and Third World Concerns
Case study: DDT and Acid Rain

ASSIGNMENTS:**Reading Assignments:**

Students will be assigned readings from the representative textbook, current news articles and case studies.

Writing Assignments:

Students will be required to write summaries of news articles and case studies.

Outside Assignments:

Students will be conducting four hours a week of independent work outside of the classroom. This will include studying and answering questions presented in lecture.

METHOD OF INSTRUCTION:

In-person lectures will teach toxicological, cellular and ecological principles. Case studies will be used to examine the impacts of toxins on various biological and ecological systems. Guided discussions will aid students in hypothesis formation and toxin evaluation.

METHODS OF EVALUATION:

In-class exams will include objective and essay questions that demonstrate scientific reasoning of toxic effects on systems. Students presentations that focus on a toxin's impact will be evaluated to determine if the students are obtaining a mastery of the course information.

BASIS FOR GRADING:

The assignment of a grade is based on the level of achievement of the outcomes and objectives of the course outline and is reflected in quantifiable terms in the course syllabus.

REPRESENTATIVE TEXTBOOKS:

Rodricks (1992) Calculated Risks: The toxicity and human health risks of chemicals in our environment.
 Kamrin (1998) Toxicology - a primer on toxicological principles and applications.
 Hughes (1996) Essentials of Environmental Toxicology: Environmentally Hazardous Substances and Human Health.
 Klaunig (2008) Environmental Toxicology - a primer (not yet published)

RATIONALE

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This is a multidisciplinary introductory course that covers many topics in toxicology, ranging from the cellular level to the ecosystem. This course will provide an overview of the biology of toxic substances, as well as an introduction to toxicological and environmental process. Case studies will be analyzed to study how the scientific method is used to determine toxicological effects on individuals, populations and ecosystems. With so much recent scientific interest in our environment, this course will be a timely and exciting educational experience for students of multiple backgrounds, such as biology, marine biology, environmental science, pre-nursing, etc. No other courses currently on campus and open to general education students cover the broad toxicology of chemical, both natural and anthropogenic in nature. Once articulated, this course will fulfill GE requirements for IGETC Area 5B (Physical and Biological Sciences), CSU Transfer GE Area B2 (Life Science).

RESOURCES REQUIRED

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MISCELLANEOUS

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Advisory generate desc:	N	NO
Area department:	BIO	BIOLOGICAL SCIENCES
Audit flag:	N	NOT AUDITABLE
Basic skills:	X	NOT BASIC SKILLS
Classification:	A	Liberal Arts and Sciences
Cost level:	00	VALUE NOT FOUND
Disciplines:		BIOLOGICAL SCIENCES
Division:	02	MERIDITH RANDALL
Faculty service areas:		BIOLOGY
Fee:	\$0.00	
In-service:	X	NOT IN-SERVICE
Level below transfer:	X	NOT APPLICABLE
Matric-requiring:	X	Exempt from assessment
Maximum class size:	0	
Maximum wait list:	0	
Method of instruction:	02	LECTURE
Non-credit category:	X	NOT APPLICABLE, CREDIT COURSE
Open entry/exit:	N	Not open entry/exit
Pacs activity:	0401	BIOLOGY GENERAL
Pacs program project:	0000	
Preq/coreq generate desc:	N	NO
Preq/coreq provisional:	N	NO
Preq/coreq reg check:	N	NO PREREQUISITE RULES EXIST
Repeat group id:		
Requires instructor sig:	N	INSTRUCTOR'S SIGNATURE NOT REQUIRED

APPROVED COURSE

BIO 245

SAM classification:	E	Non-occupational
Selected/special topic:	N	NOT A SELECTED TOPIC COURSE
Special class:	X	NOT A SPECIAL COURSE
TOP code:	0401.00	BIOLOGY, GENERAL
Workload:	0.0000	