

# Human Health Risk Assessment

VME 6607

Fall 2015, 4 credits

CEHT Conference Room, Wednesday (1:55 – 3:50 pm) and Friday (12:50 – 2:45 pm)

## Instructors

Steve Roberts, Professor ([smroberts@ufl.edu](mailto:smroberts@ufl.edu)) and Leah Stuchal, Assistant Professor ([lstuchal@ufl.edu](mailto:lstuchal@ufl.edu))

## Contributing Lecturers

Keith Tolson ([KTolson@Geosyntec.com](mailto:KTolson@Geosyntec.com)), Kendra Goff ([kendra\\_goff@doh.state.fl.us](mailto:kendra_goff@doh.state.fl.us)), and Chris Borgert ([cjborgert@apt-pharmatox.com](mailto:cjborgert@apt-pharmatox.com))

## Course Description

The purpose of this course is to introduce students to the concepts, data sources, and methodologies used in the field of human health risk assessment and to provide the students with an understanding of current issues in this field. The course will include presentations by faculty and guest lecturers, as well as discussion of key papers from the literature. Students will obtain enough hands-on experience to be able to conduct a risk assessment.

## Course Objectives

Upon successful completion of the course, students will be able to:

1. Identify and use data sources for hazard identification
2. Demonstrate ability to read and use toxicological reports for dose-response assessments
3. Use EPA documents to conduct exposure assessments
4. Demonstrate familiarity with a range of risk models
5. Conduct a risk assessment
6. Demonstrate an understanding of how risk assessments are used and the impact of risk assessments on public policy and public health issues.

## Course materials

There is no textbook for this course. The primary readings will be from the literature and EPA and ATSDR documents.

## Course expectations and grading

It is expected that students will come prepared for class, including discussion of reading assignments. Some class activities will require the use of a computer, including installing and running software.

Grading will be based on results from three examinations and class participation as follows:

Midterm I	30%
Midterm II	30%
Final Exam	30% (or attendance of guest lectures)
Class participation	10%

## Class Schedule

Date	Topic/Assignment	Presenter
Aug 26	Course Overview	Stuchal
Aug 28	Regulatory Framework for Risk Assessment	Roberts
Sep 2	Hazard Identification: Causation; Design of toxicology studies for hazard ID	Roberts
Sep 4	Hazard Identification; Carcinogenicity	Roberts
Sep 9	Dose-Response Assessment, Non-cancer: NOAEL/LOAEL approaches, Hazard quotients; Uncertainty Factors	Stuchal
Sep 11	Dose-Response Assessment, Non-cancer: Benchmark Dose approaches	Stuchal
Sep 16	Dose-Response Assessment, Cancer: Threshold and non-threshold approaches, Margins of Exposure	Stuchal
Sep 18	Midterm Examination	--
Sep 23	Exposure Assessment: Exposure measurement	Stuchal
Sep 25	Exposure Assessment: Data sources	Stuchal
Sep 30	Exposure Assessment: Exposure modeling	Stuchal
Oct 2	Vapor Intrusion	Stuchal
Oct 7	Risk Characterization, Deterministic: Portraying cancer and non-cancer risks	Stuchal
Oct 9	Evaluating Risk from Mixtures	Borgert*
Oct 14	Risk Characterization, Probabilistic: Monte Carlo simulation	Tolson*
Oct 16	Midterm Examination	--
Oct 21	Risk Characterization, Probabilistic: Portraying cancer and non-cancer risks	Stuchal
Oct 23	Risk Assessment in Public Health	Goff*
Oct 28	Risk from lead: IEUBK model	Stuchal
Oct 30	Risk from radionuclides	Stuchal
Nov 4	Developing risk-based cleanup levels: Soil	Roberts
Nov 6	No class – Homecoming	--
Nov 11	No class – Veterans Day	Roberts
Nov 13	Developing risk-based cleanup levels: Groundwater	--

	and air	
Nov 18	Risk Communication	Roberts
Nov 20	Review session for final exam	Roberts/Stuchal
Nov 25	No class - Thanksgiving	--
Nov 27	No class - Thanksgiving	--
Dec 3	Final examination	--

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