ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanis ms

Jump to Today





ENVH 516 A 2023 Syllabus rev 04 03 2023.pdf

(https://canvas.uw.edu/courses/1633814/files/104633962?wrap=1)

ENV H 516 A – TOXIC AGENTS COURSE SYLLABUS

Spring 2023

CONTACT INFORMATION

Instructor: Toby B. Cole (he/him/his), Clinical Assistant Professor, DEOHS

Contact: tobycole@uw.edu
Office hours: By appointment

Course times and locations

Lecture: Mondays, Wednesdays, & Fridays, 8:30 – 9:20 AM

Location: <u>Health Sciences Education Building</u> (<u>https://www.washington.edu/maps/#!/hseb)</u> (HSEB),

Room 426

LAND ACKNOWLEDGEMENT

The University of Washington acknowledges the Coast Salish people of this land, the land which touches the shared waters of all tribes and bands within the Duwamish, Suquamish, Tulalip and Muckleshoot nations.

ILLNESS PROTOCOLS AND SAFETY

If you feel ill or exhibit respiratory or other symptoms, you should not come to **class**. Seek medical attention if necessary and notify your instructor(s) as soon as possible by email.

Please check your email daily BEFORE coming to class. If we need to conduct class remotely because the instructor or a guest speaker is unable to attend in person, we will send all registered students an email with a Zoom link for remote instruction or a plan for making up the class.

Additional recommendations include:

- 1. Get boosted with the updated COVID-19 vaccines. These vaccines are available at clinics and pharmacies, as well as through UW Medicine and local health agencies.
- 2. Get your annual flu shot.
- 3. Wear a high-quality mask in indoor public spaces and while traveling. Masks are strongly recommended the first two weeks of spring quarter. High-quality masks help protect against a range of respiratory viruses, and are available for free in locations on each UW campus.
- 4. Take a coronavirus test if you have symptoms or have been exposed. Rapid antigen tests are widely available for free at on-campus locations linked here. The Husky Coronavirus Testing voluntary research study is also available for UW students.
- 5. Activate WA Notify on your phone to receive exposure notifications and so that you can anonymously let others know of their exposure if you test positive.

ENV H 516 A is the second course of a two-course sequence (ENV H 515/516). The overall goal of the series is for students to expand the basic concepts and mechanisms of toxicology gained in ENV H 503 to understand how chemicals interact with biological systems to produce adverse effects, i.e., the science of toxicology. Thus, prerequisites for this series generally include having taken ENV H 503 and ENV H 515. While ENV H 515 focused on organ toxicology and organ systems, the content of ENV H 516 focuses on the most important classes of toxic chemicals (as well as physical and biological agents), their toxic effects in humans and animals, and the underlying mechanisms. There will be experts in some of the proposed topics providing guest lectures throughout the course. Lectures will cover the toxicology of natural toxins, metals, phthalates, BPA, PCBs, dioxins and other halogenated contaminants, PBDEs, solvents, radiation, pesticides, air pollutants, and nanomaterials, as well as food toxicology and occupational toxicology.

COURSE LEARNING OBJECTIVES

After completing this course, students will have acquired a fundamental understanding of the toxic effects of different agents. They will be able to identify major issues related to the toxicity of environmental agents, recognize toxic effects induced by these agents, explain mechanisms of toxicity, identify routes and nature of exposures, evaluate types of toxic effects, have a basic understanding of the main aspects of ecotoxicology, occupational toxicology and clinical toxicology, and their roles within toxicology, public health and environmental and occupational health sciences.

REQUIRED TEXTBOOKS & READINGS

Casarett & Doull's Toxicology, The Basic Science of Poisons, 9th Edition, Curtis D. Klaassen & John B Watkins III, McGraw Hill, 2021. Chapters in this textbook cover most topics taught in the class. (This textbook is available as an eBook through the UW Libraries, or through this website) Recommended, optional, or supplementary readings

Additional reading material, handouts with slides, etc. will be available as Canvas Pages or Adobe Acrobat files that can be viewed on Canvas or downloaded. In some cases, the readings may be links to websites. Videos will also be available on Canvas Pages.

GRADING

Grades will be determined by weekly quizzes (15%), classroom participation (15%), midterm exam (35%), and final exam (35%). Each of the two exams will cover all material presented in the preceding lectures. The final exam will be held during finals week but will not be a cumulative exam.

Grading Criteria

A 4.0 scale will be calculated using the following conversion:

4.0 Scale	Percentage	4.0 Scale	Percentage	4.0 Scale	Percentage
4.0	100%	3.1	86%	1.7	72%
4.0	99%	3.0	85%	1.6	71%
3.9	98%	2.9	84%	1.5	70%
3.9	97%	2.8	83%	1.4	69%
3.8	96%	2.7	82%	1.3	68%
3.8	95%	2.6	81%	1.2	67%
3.7	94%	2.5	80%	1.1	66%
3.7	93%	2.4	79%	1.0	65%
3.6	92%	2.3	78%	0.9	64%
3.6	91%	2.2	77%	0.8	63%
3.5	90%	2.1	76%	0.7	62%
3.4	89%	2.0	75%	0.7	61%
3.3	88%	1.9	74%	0.7	60%
3.2	87%	1.8	73%		

Late assignment policy

All quizzes must be submitted through Canvas by the due date. Please reach out to us if you cannot submit an assignment on time. The instructor understands that in some instances, certain personal situations may make it impossible to submit a specific material on time. For this reason, there is no penalty for the submission of late assignments, but the instructor reserves the right to institute a penalty of 10% if students do not submit materials within the required timeframe on multiple occasions.

Student responsibilities

Students are expected to participate in class by asking questions or providing comments to the lecturers, and by involvement in class discussions. Guest lecturers will be an asset to the course and will assist in providing coverage of subject areas within their respective areas of expertise. Over the course, there will be content posted on Canvas before and/or after each session. Students are expected to review any content before coming to class, and to complete the required online quizzes on time. All sessions will be recorded and uploaded to Canvas for instructional purposes related to this class. Students are not permitted to copy or share the recording with others. If you have privacy concerns about Zoom recordings in this class, please contact the course instructor.

The instructor welcomes any feedback you may have to improve their teaching and this course.

COURSE SESSION SCHEDULE

Below is a tentative lecture schedule. Any changes will be announced in class and/or posted on Canvas.

Date	Topic	Instructor	Reading
3/27 (Mon)	Introduction / Overview	Toby Cole	
3/29 (Wed)	Animal & Plant Toxins I	Toby Cole	Chapter 26
3/31 (Fri)	Phthalates/BPA	Sheela Sathyanarayana	Handout
4/03 (Mon)	Metals	Tom Lewandowski	Chapter 23
4/05 (Wed)	Metals	Tom Lewandowski	Chapter 23
4/07 (Fri)	Metals	Tom Lewandowski	Chapter 23
4/10 (Mon)	Metals	Tom Lewandowski	Chapter 23
4/12 (Wed)	Metals	Tom Lewandowski	Chapter 23
4/14 (Fri)	PCBs	Edward Kelly	Handout
4/17 (Mon)	Dioxins/other halogenated chemicals	Edward Kelly	Handout
4/19 (Wed)	PBDEs	Julia Cui	Handout
4/21 (Fri)	Animal & Plant Toxins II	Toby Cole	Chapter 26
4/24 (Mon)	Solvents	Toby Cole	Chapter 24
4/26 (Wed)	Solvents	Toby Cole	Chapter 24
4/28 (Fri)	Solvents	Toby Cole	Chapter 24
5/01 (Mon)	Radiation	William Griffith	Chapter 25
5/03 (Wed)	Mid-term Exam		
	(covers 3/27 – 4/28)		
5/05 (Fri)	Pesticides	Lucio Costa	Chapter 22
5/08 (Mon)	Pesticides	Lucio Costa	Chapter 22
5/10 (Wed)	Pesticides	Lucio Costa	Chapter 22
5/12 (Fri)	Pesticides	Lucio Costa	Chapter 22
5/15 (Mon)	Air Pollution	Cora Sack	Chapter 31
5/17 (Wed)	Air Pollution	Toby Cole	Chapter 31
5/19 (Fri)	Nanomaterials	Chris Carosino	Chapter 29
5/22 (Mon)	Nanomaterials	Chris Carosino	Chapter 29
5/24 (Wed)	Food Toxicology	J. Scott Meschke	Chapter 27
5/26 (Fri)	Food Additives	Toby Cole	Chapter 27
5/29 (Mon)	HOLIDAY (NO CLASS)		
5/31 (Wed)	Occupational Toxicology	Katia Harb	Chapter 34
6/02 (Fri)	Occupational Toxicology	Deborah Cherry	Chapter 34
6/07 (Mon)	Final Exam		
	(covers 5/01 – 6/02)		

Communication and Writing Skills

Communication through writing and speaking is an important transferable skill for all career pathways. Establishing a strong foundation in communication skills will help you be successful throughout your

future course work and career. Therefore, this course includes assignments with the goal to help you identify areas of strength and improvement in your communication. If you feel that you could benefit from additional opportunities to improve your writing skills in particular, a list of resources at the UW and others accessible online can be found on the SPH website here \rightleftharpoons

(https://sph.washington.edu/sites/default/files/2020-09/Writing-Resources-9.24.20.pdf)

IMPORTANT POLICIES & RESOURCES

Academic Integrity

Students at the University of Washington (UW) are expected to maintain the highest standards of academic conduct, professional honesty, and personal integrity.

The UW School of Public Health (SPH) is committed to upholding standards of academic integrity consistent with the academic and professional communities of which it is a part. Plagiarism, cheating, and other misconduct are serious violations of the University of Washington Student Conduct Code (WAC 478-121). We expect you to know and follow the university's policies on cheating and plagiarism, and the SPH Academic Integrity Policy. Any suspected cases of academic misconduct will be handled according to University of Washington regulations. For more information, see the University of Washington Community Standards and Student Conduct.

Access and Accommodations

Your experience in this class is important to me. It is the policy and practice of the University of Washington to create inclusive and accessible learning environments consistent with federal and state law. If you have already established accommodations with Disability Resources for Students (DRS), please activate your accommodations via myDRS so we can discuss how they will be implemented in this course.

If you have not yet established services through DRS, but have a temporary health condition or permanent disability that requires accommodations (conditions include but not limited to; mental health, attention-related, learning, vision, hearing, physical or health impacts), contact DRS directly to set up an Access Plan. DRS facilitates the interactive process that establishes reasonable accommodations. Contact DRS at disability.uw.edu.

Religious Accommodations

Washington state law requires that UW develop a policy for accommodation of student absences or significant hardship due to reasons of faith or conscience, or for organized religious activities. The UW's policy, inlcuding more information about how to request an accommodation, is available at Religious Accommodations Policy (https://registrar.washington.edu/staffandfaculty/religious-accommodations-policy/). Accommodations must be requested within the first two weeks of this course using the Religious Accommodations Request form (https://registrar.washington.edu/students/religious-accommodations-request/).

Inclusion & Diversity

Diverse backgrounds, embodiments and experiences are essential to the critical thinking endeavor at the heart of University education. In SPH, we are expected:

- 1. To respect individual differences, which may include, but are not limited to, age, cultural background, disability, ethnicity, family status, gender, immigration status, national origin, race, religion, sex, sexual orientation, socioeconomic status and veteran status.
- 2. To engage respectfully in the discussion of diverse worldviews and ideologies embedded in course readings, presentations and artifacts, including those course materials that are at odds with personal beliefs and values.
- To encourage students with concerns about classroom climate to talk to their instructor, adviser, a member of the departmental or SPH EDI Committee, the Assistant Dean for EDI, or the program's director.

Classroom Climate

We are co-creators of our learning environment. It is our collective responsibility to develop a supportive learning environment for everyone. Listening with respect and an open mind, striving to understand others' views, and articulating your own point of view will help foster the creation of this environment. We engage our differences with the intent to build community, not to put down the other and distance our self from the other. Being mindful to not monopolize discussion and/or interrupt others will also help foster a dialogic environment.

The following guidelines can add to the richness of our discussion:

- We assume that persons are always doing the best that they can, including the persons in this learning environment.
- We acknowledge that systematic oppression exists based on privileged positions and specific to race, gender, class, religion, sexual orientation, and other social variables and identities.
- We posit that assigning blame to persons in socially marginal positions is counter-productive to our practice. We can learn much about the dominant culture by looking at how it constructs the lives of those on its social margins.
- While we may question or take issue with another class member's ideology, we will not demean, devalue, or attempt to humiliate another person based on her/his experiences, value system, or construction of meaning.
- We have a professional obligation to actively challenge myths and stereotypes about our own groups and other groups so we can break down the walls that prohibit group cooperation and growth.
 [Adapted from Lynn Weber Cannon (1990). Fostering positive race, class and gender dynamics in the classroom. Women Studies Quarterly, 1 & 2, 126-134.]

We are a learning community. As such, we are expected to engage with difference. Part of functioning as a learning community is to engage in dialogue in respectful ways that supports learning for all of us and that holds us accountable to each other. Our learning community asks us to trust and take risks in being vulnerable.

Here are some guidelines that we try to use in our learning process:

- LISTEN WELL and be present to each member of our group and class.
- Assume that I might miss things others see and see things others miss.
- Raise my views in such a way that I encourage others to raise theirs.
- Inquire into others' views while inviting them to inquire into mine.
- Extend the same listening to others I would wish them to extend to me.
- Surface my feelings in such a way that I make it easier for others to surface theirs.
- Regard my views as a perspective onto the world, not the world itself.
- Beware of either-or thinking.
- Beware of my assumptions of others and their motivations.
- Test my assumptions about how and why people say or do things.
- Be authentic in my engagement with all members of our class.

Pronouns

We share our pronouns because we strive to cultivate an inclusive environment where people of all genders feel safe and respected. We cannot assume we know someone's gender just by looking at them. So we invite everyone to share their pronouns.

Bias Concerns

The Office of the Dean has a student concern policy, a faculty concern policy and standard HR procedures for staff concerns. Our 2018 climate survey states that most people in SPH do not report bias incidents because they do not know where to go. Students are encouraged to report any incidents of bias to someone they feel comfortable with, including instructors, advisers or department staff. They can email dcinfo@uw.edu for immediate follow up. Bias concerns can be anonymously and confidentially reported via the online form found here: https://sph.washington.edu/about/diversity/bias-concerns. Data is collected by the Assistant Dean for EDI and the Director of Program Operations for Student and Academic Services and tracked for resolution and areas are identified for further training.

Sexual Harassment

Sexual harassment is a form of harassment based on the recipient's sex that is characterized by:

- 1. Unwelcome sexual advances, requests for sexual favors, or other verbal or physical conduct of a sexual nature by a person who has authority over the recipient when:
 - o Submission to such conduct is an implicit or explicit condition of the individual's employment, academic status, or ability to use University facilities and services, or
 - o Submission to or rejection of the conduct affects tangible aspects of the individual's employment, academic status, or use of University facilities.
- 2. Unwelcome and unsolicited language or conduct that creates an intimidating, hostile, or offensive working or learning environment, or has the purpose or effect of unreasonably interfering with an individual's academic or work performance.

If you believe that you are being harassed, or have observed harassment, you can report it to SPH using the bias concerns link. The University also has designated offices to help you: SafeCampus; Office of the Ombud; Title IX Investigation Office; and University Complaint Investigation and Resolution Office.

Course Summary:

Date	Details	Due
Mon Mar 27, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event id=3108264&include contexts=course 1633814)	8:30am to 9:30am
Wed Mar 29, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event id=3108265&include contexts=course 1633814)	8:30am to 9:30am
Fri Mar 31, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event id=3108266&include contexts=course 1633814)	8:30am to 9:30am
Mon Apr 3, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event_id=3108267&include_contexts=course_1633814)	8:30am to 9:30am
Wed Apr 5, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event_id=3108268&include_contexts=course_1633814)	8:30am to 9:30am
Fri Apr 7, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event id=3108269&include contexts=course 1633814)	8:30am to 9:30am
	Quiz #1 (Due Fri 4/7) (https://canvas.uw.edu/courses/1633814/assignments/82927	due by 11:59pm
Mon Apr 10, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event id=3108270&include contexts=course 1633814)	8:30am to 9:30am

Date	Details	Due
Wed Apr 12, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event_id=3108271&include_contexts=course_1633814)	8:30am to 9:30am
Fri Apr 14, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event id=3108272&include contexts=course 1633814)	8:30am to 9:30am
	Quiz #2 (Due Fri 4/14) (https://canvas.uw.edu/courses/1633814/assignments/8303	due by 11:59pm
Mon Apr 17, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event id=3108273&include contexts=course 1633814)	8:30am to 9:30am
Wed Apr 19, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event_id=3108274&include_contexts=course_1633814)	8:30am to 9:30am
Fri Apr 21, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event_id=3108275&include_contexts=course_1633814)	8:30am to 9:30am
	Quiz #3 (Due Fri 4/21) (https://canvas.uw.edu/courses/1633814/assignments/8314	4981) due by 11:59pm
Mon Apr 24, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event id=3108276&include contexts=course 1633814)	8:30am to 9:30am
Wed Apr 26, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event id=3108277&include contexts=course 1633814)	8:30am to 9:30am
Fri Apr 28, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms	8:30am to 9:30am

Date	Details	Due
	(https://canvas.uw.edu/calendar? event_id=3108278&include_contexts=course_1633814)	
Mon May 1, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event_id=3108279&include_contexts=course_1633814)	8:30am to 9:30am
Wed May 3, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event id=3108280&include contexts=course 1633814)	8:30am to 9:30am
	EXAM #1 (https://canvas.uw.edu/courses/1633814/assignments/833	due by 9:30am
Fri May 5, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event_id=3108281&include_contexts=course_1633814)	8:30am to 9:30am
Mon May 8, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event_id=3108282&include_contexts=course_1633814)	8:30am to 9:30am
Tue May 9, 2023	EXAM #1 (https://canvas.uw.edu/courses/1633814/assignments/833(1 student)	8922) due by 11am
Wed May 10, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event_id=3108283&include_contexts=course_1633814)	8:30am to 9:30am
Fri May 12, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event id=3108284&include contexts=course 1633814)	8:30am to 9:30am
Mon May 15, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event id=3108285&include contexts=course 1633814)	8:30am to 9:30am

Date	Details	Due
Wed May 17, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event_id=3108286&include_contexts=course_1633814)	8:30am to 9:30am
Fri May 19, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event id=3108287&include contexts=course 1633814)	8:30am to 9:30am
Mon May 22, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event_id=3108288&include_contexts=course_1633814)	8:30am to 9:30am
Wed May 24, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event id=3108289&include contexts=course 1633814)	8:30am to 9:30am
Fri May 26, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event_id=3108290&include_contexts=course_1633814)	8:30am to 9:30am
Mon May 29, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event_id=3108291&include_contexts=course_1633814)	8:30am to 9:30am
Wed May 31, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event_id=3108292&include_contexts=course_1633814)	8:30am to 9:30am
Fri Jun 2, 2023	ENV H 516 A Sp 23: Toxic Agents: Effects And Mechanisms (https://canvas.uw.edu/calendar? event id=3108293&include contexts=course 1633814)	8:30am to 9:30am