

Syllabus
CB7430: CANCER EPIDEMIOLOGY
Winter 2023
MidMed 3rd floor classroom
Tuesdays, 2:30pm-4:10pm, 2 credits
Instructor: Kristen Purrington M.P.H., Ph.D.

Objective: This 2-credit course will serve to introduce graduate level students in public health, cancer biology, and medical sciences to the principal concepts and methods used in cancer epidemiology. The course will review important measures of cancer burden (prevalence, incidence, mortality) by race and ethnicity in the United States and worldwide as well as the sources data for these estimates. Students will receive an introduction to cancer genetic epidemiology as well as the major causes of human cancer (tobacco, obesity, diet, alcohol, viral and bacterial agents and ultraviolet radiation). As part of the course curriculum, students will be required to review and provide critical appraisal of selected literature in innovative areas of cancer research.

Prerequisites: None. However, FPH 7240 “Introduction to Epidemiology” is strongly recommended by the instructor. For students who have not taken an introductory epidemiology course, an introductory epidemiology textbook is recommended (e.g. Aschengrau A, Seage GR. Essentials of Epidemiology In Public Health.) for reference.

Criteria for student evaluation:

Students will individually lead a presentation (30%) focusing on the descriptive epidemiology, biology, and pathogenesis of a single cancer site (more details to be given in class). 20% will be assigned based upon individual contribution to in-class discussions during lectures, journal clubs, and student presentations. Finally, students will write a paper (40%) due at the end of the semester based on a question/problem that interests them in cancer epidemiology related to prevention, risk, treatment, or survival (to be approved by instructor, more details to be given in class). This paper will be structured to give students practice writing in the style of a “Background/Significance” section of a grant application.

Required Readings: Articles and lecture notes will be posted on Canvas.

Office Hours: By appointment

Teaching Methods: Class time will be split between lectures, journal-club style article discussions, and student-led presentations. Students should be prepared to participate in all discussions. The class will be divided into four main sections based on lecture material: (1) the burden of cancer, (2) cancer biology & genetics, (3) causes of human cancer, and (4) primary and secondary prevention strategies. Student presentations will begin the week of February 17, 2023.

Grading Components

	Points	% of total grade
Student presentation	30	30%
Paper	50	50%
In-class participation	20	20%
Total	100	100%

Final Course Grade

Final Grade (%)	Letter Grade
95-100	A
90-94.99	A-
85-89.99	B+
80-84.99	B
75-79.99	B-
<75	other

Course Schedule

Week	Lecture Topic	Presentation	Reading	Lecturer
The Burden of Cancer				
Week 1: (1/10)	Cancer Incidence and Mortality Trends (cancer registries)		Henley, et al. 2020	Purrington
Week 2: (1/17)	Epi study design overview & migrant studies		Jiagge, et al. 2016	Purrington
Cancer Biology & Genetics				
Week 3: (1/24)	Intro to Cancer Biology & Genetics		Roberts, et al. 2020	Purrington
Week 4: (1/31)	Molecular Epidemiologic Studies & Biomarkers		Hearn, et al. 2020	Purrington
Causes of Human Cancer				
Week 5: (2/7)	Nutrition and Cancer	Student presentation		Guest: Cathy Bock, PhD
Week 6: (2/14)	Infection & cancer	Student presentation	TBD	Purrington
Week 7: (2/21)	Obesity and cancer	Student presentation		Guest: Jennifer Beebe-Dimmer, PhD
Week 8: (2/28)	Hormonal exposures and cancer	Student presentation	TBD	Purrington
Week 9: (3/7)	Tobacco & cancer	Student presentation	TBD	Purrington
Week 10: (3/14)	<i>NO CLASS Spring Break</i>			
Week 11: (3/21)	Social epidemiology of cancer	Student presentation		Guest: Theresa Hastert, PhD
Week 12: (3/28)	Radiation and cancer	Student presentation	TBD	Purrington
Primary and Secondary Prevention Strategies				
Week 13: (4/4)	Cancer prevention- behavioral interventions	Student presentation		Guest: Lauren Hamel, PhD
Week 14: (4/11)	Cancer Screening		TBD	Purrington
Week 15: (4/18)	Cancer Survivorship		TBD	Purrington