

Schedule for Basic Radiobiology 9 hp, VT 2026

Teaching activities marked in red are mandatory to attend

Week	Day	Date	Time	Teaching activity	Teacher	Room	Literature ¹
12	Monday	16.03	09:30-10:00	Introduction to the course	EKL	MSF library	
			10:00-12:00	Cell biology	EKL	MSF library	Handouts
				Interaction of ionizing radiation in biological matter	EKL	<i>Video lecture</i>	1
	Tuesday	17.03	10:00-15:00	Workshop: cancer biology	EKL	MSF library	
				Cancer biology		<i>Video lecture</i>	Handouts
	Onsdag	18.03	10:00-12:00	Workshop: DNA damage	EKL	MSF library	2
			13:00-15:00	Workshop: DNA damage response	EKL	MSF library	2
	Friday	20.03	09:15-09:45	End-of-week quiz 1: Normal and cancer cell biology		MSF library	
			10:00-15:00	Workshop: cell survival curves and models for radiation cell killing <i>Calculation exercises 1 handed out</i>	EKL	MSF library	3
13	Monday	23.03		Radiosensitivity and cell age in the mitotic cycle – Autoradiography and bromodeoxyuridine labelling	EKL	<i>Video lecture</i>	4
			13:00-16:00	Workshop: Radiosensitivity and cell age in the mitotic cycle	EKL	MSF library	4
	Tuesday	24.03	10:00-15:00	Workshop: Repair of radiation damage	EKL	MSF library	5
	Wednesday	25.03	10:00-12:00	Workshop: Oxygen effect and reoxygenation	EKL	MSF library	6
			13:00-16:00	Workshop: Linear energy transfer and relative biologic effectiveness		MSF library	7
	Friday	27.03	09:15-09:45	End-of-week quiz 2: DNA damage and repair		MSF library	
			10:00-11:00	<i>Calculation exercises seminar 1</i>			
			11:15-12:00	<i>Active learning exercise 1</i>			
14	Monday	30.03	10:00-12:00	Acute effects of total-body irradiation	EKL	MSF library	8
	Tuesday	31.03	14:00-16:00	Biological dosimetry. Effects of high doses	AW	Frescati	Handouts
			16:00-17:00	<i>Tour RB lab at SU</i>	AW	Frescati	
	Wednesday	01.04	09:30-10:00	<i>Introduction to the computer exercise</i>	EKL	Computer room	
			10:00-15:00	<i>Time for exercises</i> <i>Oral presentation of computer exercise (by group) when ready</i>	EKL	Computer room	
	Thursday	02.04	09:15-09:45	End-of-week quiz 3: Acute effects and biological dosimetry			
			10:00-12:00	<i>Active learning exercise 2</i>	EKL	MSF library	
				Radioprotectors	EKL	<i>Video lecture</i>	9

15	Tuesday	07.04	09:00-10:00	<i>Calculation exercises seminar 2</i>	EKL	MSF library	
			10:00-12:00	<i>Workshop: Radiation carcinogenesis Hereditary effects of radiation</i>	EKL	MSF library	10
			13:00-14:00	<i>Workshop: Hereditary effects of radiation</i>	EKL	MSF library	11
			14:00-15:00	<i>Workshop: Effects of radiation on the embryo and foetus</i>	EKL	MSF library	12
				<i>Radiation cataractogenesis</i>	EKL	<i>Video lecture</i>	13
	Wednesday	08.04	13:00-15:00	Models for risk of second cancer	EKL	Zoom lecture	Handouts
	Friday	10.04	09:15-09:45	End-of-week quiz 4: Long-term effects of radiation			
			10:00-15:00	<i>Active learning exercise 3 and 4</i> <i>Tasks for presentation handed out</i>	EKL	MSF library	
16	Monday	13.04	13:00-16:00	Biostatistics - Distribution plots, probability distribution, Kaplan-Meier survival curves	C-BL	MSF library	Handouts
			16:00-16:30	Exercises and discussion	C-BL	MSF library	
	Tuesday	14.04	13:00-16:00	Biostatistics - Correlation and regression, overview of unsupervised learning	C-BL	MSF library	Handouts
			16:00-16:30	Exercises and discussion	C-BL	MSF library	
	Wednesday	16.04	13:00-16:00	Biostatistics - Introduction of clustering analysis (k-means, k-medoids) and dimensionality reduction (PCA, MDS)	C-BL	MSF library	Handouts
			16:00-16:30	Exercises and discussion	C-BL	MSF library	
	Friday	17.11	09:15-09:45	End-of-week quiz 5: Biostatistics			
			10:00-12:00	Nanodosimetry	ITD	MSF library	Handouts
17	Tuesday	21.11	10:00-15:00	<i>Presentation of assigned tasks</i>	EKL	MSF library	
				Time for questions	EKL	MSF library	
	Friday	24.04	09:00-14:00	FINAL EXAMINATION		Bo Nilsson lecture hall	

Teachers:

C-BL	Chun-Biu Li, Stockholm University
EKL	Emely Kjellsson Lindblom, Stockholm University
ITD	Iuliana Toma-Dasu, Stockholm University
AW	Andrzej Wojcik, Stockholm University

Literature:

1. Eric Hall and Amato Giaccia: *Radiobiology for the Radiologist*, Lippincott Williams and Wilkins Sixth Ed 2006, Chapters 1-13