Week	Class	date	Lecturer	Lecture topic	Lab	Submissions	Quiz
1	1	23-Jan	Garner + Lichtman	Cells, models, and thinking: What does a cell need to do? - What does a microscope need to do?			
	2	25-Jan	Lichtman	Microscope Optics: Light Rays and Lenses.			
2	3	30-Jan	Garner	The historic questions of cell biology.	Lab 1 – Operation, care, usage of microscopes. Data transfer.		
	4	1-Feb	Lichtman	Light waves			Quiz 1 (class 2
3	5	6-Feb	Garner	The first views of cellular architecture - Electron Microscopy.	Lab 2 – Slide preparation, digital imaging, timelapse, and measurement.	Lab 1 report due before section	Quiz 2 (class 3)
	6	8-Feb	Garner	The paths become visible Part 1 - Tubules			Quiz 3 (class 4)
4	7	13-Feb	Lichtman	The limits of optical resolution: The PSF and the diffraction and Nyquist limit.	Lab 3 - Contrast generation and the resolution limit.	Lab 2 report due before section	Quiz 4 (class 5)
	8	15-Feb	Lichtman	Quantum optics, electron optics			Quiz 5 (class 6)
5	9	20-Feb	Garner	The paths become visible Part 2 - actin and the motors.	Lab 4 – Fluorescence microscopy and vital dyes.	Lab 3 report due before section	Quiz 6 (class 7)
	10	22-Feb	Lichtman	Fluorescent microscopy			Quiz 7 (class 8)
6	11	27-Feb	Garner	Part 3 - placing molecular identity back into the context of the cell	Independent study 1		Quiz 8 (class 9)
	12	29-Feb	Lichtman	GFP and other genetically encoded fluorescent probes.		Lab 4 report due before normal section time	Quiz 9 (class 10)
7	13	5-Mar	Garner	Learning by watching cellular dynamics.			Quiz 10 (class 11)
	14	7-Mar	Lichtman	Confocal microscopy			Quiz 11 (class 12)
		12-Mar		**Spring Recess.**			
		14-Mar		**Spring Recess.**			
8	15	19-Mar	Garner	How one protein can do many different things.		Revised labs 1-4 due.	Quiz 12 (class 13)
	16	21-Mar	Lichtman	2 photon and light-sheet		Independent study 1 due	Quiz 13 (class 14)
9	17	26-Mar	Richardson	Scopes available at the HCBI.	Independent study 2	Proposal for Independent Study 2 due ***28-Mar***	Quiz 14 (class 15)
	18	28-Mar	Lichtman	Digital imaging dos and dont's.		Approval will be given by ***5pm on Monday 1-Apr***	Quiz 15 (class 16)
10	19	2-Apr	Garner	How the cell sculpts long-range order - emergent properties.			
	20	4-Apr	Lichtman	My microscopic life		Progress report due	Quiz 16 (class 18)
11	21	9-Apr	Garner	How cells crawl			Quiz 17 (class 19)
	22	11-Apr	Richardson	Super-resolution		Progress report due	
12	23	16-Apr	Garner	How the cell segregates DNA - And makes decisions			Quiz 18 (class 21)
	24	18-Apr	Garner	Where are we now? + expectations for presentations.		Progress report due	
13	25	23-Apr	Lichtman	How to give a talk		Progress report due	
Reading period - April 28, Thursday, through May 4, Wednesday							
		TBD		Final presentations		Independent study 2 due.	

Grading

- 40% on lab reports and independent study documentation:
    - 10% initial labs (1-4) documentation
    - 10% First independent study
    - 15% Second independent study
    - 5% Second independent study initial proposal + progress reports (1 point each)

- 40% quiz - based on the lecture of the previous week - due 24 hours after each lecture - (2 excused)
- 10% Participation. Participation in lectures (including attendance) and in lab sections.
- 10% final presentation.

Best image/movie

1. Gets an additional 20% added onto grade - Methods taken into account (using obscure samples or imaging methods)
2. Wins prizes (Science prizes)

Labs

Labs during weeks 2, 3, 4, and 5 are 2h45min hours long

Independent Studies - These are conducted independently during the student's own time.