

THE ROLE OF MATHEMATICS IN MEDICINE

Schedule and Readings

Everyone should read the main paper(s) **before** class on Tuesday (even if you didn't understand everything), and be ready with questions and discussion. One-page essays will be on the starred weeks. I'll make an announcement in class, by email, and on the website if the readings change.

Week	Date	Topic	The math	Main readings	Extra readings
1	Aug 25	Testing	Bayes' Theorem	[1, 2]	[3]
2	Sep 01*	The HIV dentist	Phylogenetic reconstruction	[4, 5]	
3	Sep 08	Ebola spread	Branching processes	[6]	
4	Sep 15*	Kidney transplant exchange	Counting	[7]	[8]
5	Sep 22	Rubella	Differential equations	[9]	[10]
6	Sep 29	HIV	More differential equations	[11]	[12]
7	Oct 06*	Multistage carcinoma	Tricky differential equations	[13, 14]	[15]
8	Oct 20	Length-biased sampling	Probability	[16]	[17]
9	Oct 27*	Deep brain stimulation	Coupled oscillators	[18]	[19]
10	Nov 03	Competing risks	Survivorship analysis	[20]	[21]
11	Nov 10	The reversal paradox	Survivorship and probability	[22]	[23]
12	Nov 17*	Breast cancer	Testing biases	[24, 25, 26]	[27, 28]
13	Nov 24	Tylenol toxicity	Applied differential equations	[29]	[30]
14	Dec 01	Imatinib	Applied differential equations	[31]	[32, 33]
15	Dec 08	Project presentations	All of the above plus more		

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