

# Mathematical Origins of Life

# Curriculum

Week	Seminar	Discrete Mathematical Biology	Computer Modeling
1	Seminar <i>Life's Other Secret</i> , by Stewart Preface-Ch 3	Dynamic Modeling Allman 1.1-1.2 Discrete Non-Linear Models Allman 1.3-1.5	NetLogo Lab: Introduction to NetLogo
2	Seminar <i>Life's Other Secret</i> , by Stewart Ch 4-7	Discrete Linear Systems Allman 2.1.2.2 Eigenvectors and Eigenvalues Allman 2.3-2.4	NetLogo Lab: Writing Procedures in NetLogo – search for the top
3	Seminar <i>Life's Other Secret</i> , by Stewart Ch 8,10-12	Modeling Molecular Evolution Allman 4.1-4.2 Base Substitutions Allman 4.3-4.4	NetLogo Lab: Programming with Patches Cellular Automata and the game of life.
4	Seminar <i>Blind Watchmaker</i> , by Dawkins Ch 1-4	Phylogentic Distance Allman 4.5 <a href="#">Workshop</a> Test on Ch 1,2 and 4	NetLogo Lab: Programming with Breeds Predator-Prey models
5	Seminar <i>Blind Watchmaker</i> , by Dawkins Ch 5-8	Phylogentic Trees Allman 5.1-5.2 Tree Construction Allman 5.3-5.4	NetLogo Lab: Models of Evolution
6	Seminar <i>Blind Watchmaker</i> , by Dawkins Ch 9-11	Genetics Allman 6.1-6.3 Gene Frequency Allman 6.4	NetLogo Lab: Spontaneous Order and Pattern formation
7	Seminar <i>The Garden in the Machine</i> by Emmeche Preface and Ch 1-3	<a href="#">Workshop</a> Evolutionary Game Theory	NetLogo Lab: Prisoners Dilema:
8	Seminar <i>he Garden in the Machine</i> by Emmeche Ch 4-7	Evolutionary Game Theory Evolutionary Game Theory	NetLogo Lab: Hubnet Activity Evolution of Cooperation
9	Seminar TBA	TBA  Cumulative Final Exam	TBA
10	<a href="#">Presentations</a>	<a href="#">Presentations</a>  	<a href="#">Presentations</a>