Math 243 Evolutionary Dynamics
Professor Martin Nowak
Harvard Spring Semester, 2008

(Revised 5 February 2008)

This class offers a continuation of Math 153. I would like to present a number of research projects that are performed at the Program for Evolutionary Dynamics. We will upload further reading material on the course web page, http://www.courses.fas.harvard.edu/8136.

You are required to attend each class and write an essay on a topic of your choice relating to one of the lectures or an approved topic within evolutionary dynamics. You will be graded according to participation in discussion and the contents of your essay. Please ask many questions during class.

You will be invited to attend other talks at the Program for Evolutionary Dynamics. My aim is for you to participate in various research activities of the Program.

You are also invited to apply to the ROME program. ROME (Research Opportunities in Mathematical Evolution) was invented by Erez Lieberman. ROME is your opportunity to participate in our research projects. Some students have given their first talk on their own work or publish their first paper within ROME. Last year a research project of ROME was published in Nature and even made the front cover. ROME requires a substantial time investment. (You should not ask what ROME can do for you, but what you can do for ROME.) Admission to ROME is limited and is by competitive application. See http://www.ped.fas.harvard.edu/research/rome/
For more information about ROME, contact “Decurio” Erez Lieberman (elieberm@fas.harvard.edu, 646-662-9132).

Erez is also the TF for this course. He is available to discuss topic choice for essays, as well as any other concerns you might have about Math 243.

For other administrative questions, please contact:
Amy Ashbacher, ashbach@fas.harvard.edu, 617.496.4737

If you decide to enroll in this class please send an email to Amy indicating your name, email address, year and concentration.
Schedule: (subject to slight changes)

All of the following classes will be held at One Brattle Square, 6th Floor, Tuesdays 1:00-4:00pm
(http://www.ped.fas.harvard.edu/location/)

Tuesday, 5 Feb – Martin Nowak: Five rules for cooperation
Tuesday, 12 Feb – Reinhard Burger: Mathematical models in population genetics
Tuesday, 19 Feb – Hisashi Ohtsuki: Repeated games and dynamic optimization
Tuesday, 26 Feb – Erez Lieberman: Evolution of language
Tuesday, 4 Mar – Lorens Imhof: Stochastic game dynamics in finite and infinite populations
Tuesday, 11 Mar – Anna Dreber: Winners don’t punish
Tuesday, 18 Mar – Thomas Pfeiffer: The limited reliability of published research
Tuesday, 1 Apr – Martin Nowak: Evolutionary dynamics of cancer
Tuesday, 8 Apr – Hava Siegelmann: Some brains are super-turing
Tuesday, 15 Apr – Tibor Antal: Games in phenotype space
Tuesday, 22 Apr – Arne Traulsen: Group selection, kin selection, weak selection
Tuesday, 29 Apr – Christoph Hauert: Virtual Labs and public goods

Additional talks will be offered throughout the semester. We strongly encourage you to attend PED seminars (http://www.ped.fas.harvard.edu/events/seminar/).

Please check the web page for further announcements.

Suggested reading: