

What are the origins of life? The diversity and complexity of the life that inhabits the earth would seem to require that the answer be a complex one yet recent developments in science indicate that complex order can and does emerge from random processes and simple rules. In this program we will focus on the mathematical aspects of the origins of life. To this end you will be introduced to different mathematical tools for understanding relevant biological process. You will have the opportunity to create computer models of emergent phenomena in biology using the programming language, NetLogo. In a seminar format, You will discuss the literature relating to the mathematical origins of life. Finally you will be able to explore some aspect of mathematical biology in more detail and present your findings to the class. At the end of the program you should have

- Gained mathematical problem solving strategies and skills relevant to creating discrete mathematical models in biology.
- Learned to use NetLogo to model emergent biological phenomena.
- Learned to communicate an understanding of your learning in both oral and written form.
- Learned to work collaboratively in small groups.
- Learned to take responsibility for your own learning.
- Demonstrated an adequate understanding of the subject matter.

I will evaluate your work and award credit with these learning objectives in mind. Full credit in this program is contingent on satisfactory understanding of the content of the program as demonstrated on exams, tests, and assignments. The evaluations and the award of credit will also reflect fulfillment of the following expectations:

Expectations of the Student

- Attend all program activities on time and prepared to participate.
- Contact me in advance by phone or email if you will be absent from class.
- Take responsibility for keeping up with the most current version of the syllabus and class schedule (changes will be posted on the web site) and, in the case of absences, getting notes and handouts from classmates.
- Complete all assignments and readings on time and with integrity, giving credit to those whose ideas you use or whose words you quote. Plagiarism and cheating are serious academic offenses and will result in loss of credit and possible expulsion from the program.
- Use the classroom facilities and all computer labs responsibly.
- Contribute your share when involved in collaborations and make every effort to communicate necessary information to your team members.
- Abide by the Social Contract and the Sexual Harassment Policy.
- Complete formal self, faculty and program evaluations at the end of the quarter.

Expectations of the Faculty

As your faculty, I agree to:

- Conduct and/or participate in lectures, workshops and labs as needed and attend the activities I expect all of you to attend, unless absent due to illness.
- Review your assignments and evaluate them in a timely manner.
- Be available for conferences with you during office hours or by appointment.
- Abide by the Evergreen Social Contract and Sexual Harassment Policy.
- Complete formal evaluations of you at the end of spring quarter, in the context of individual conferences.