

**Project Scope**

The project is an opportunity for you to explore one or more ideas that interest you in relation to one of the main program themes, such as motion, growth, pattern formation, perception, order/disorder, oscillations, chaos etc. Your project could be primarily about learning some new topic or field from a textbook or journal, it could be a creative project, where you represent natural order in some kind of art form or craft, or it could be some kind of simulation in Excel, Netlogo or other computer program. It could also be an experiment or demonstration of some kind. All projects should include research on something new to you, include a written component and include some quantitative element. Here are some ideas:

Classification of Spirals in Shells  
Fibonacci Patterns in Nature  
Chaos in Water flow  
Motion Studies in Still Photography  
Creation of Optical Illusions

**Elements of the Projects**

- A project proposal (details below)
- A five page research paper that explores and develops your project topic. If your project is collaborative your papers must be on different aspects of the project. *Due Monday March 7th*
- A fifteen minute presentation of your research and your work (including time for questions and answers). There should be some multimedia component to your presentation (e.g. experimental demonstration, computer simulation, PowerPoint). *Presentations are week 10*
- A project self-assessment.

**Elements of the Project Proposal**

*due Thursday morning, January 26th*

- **A one page description of your project idea.** This should include a discussion of the concepts or questions on which it is based, how they relate to program themes and a description of your approach. You should also answer these questions. What do you want to learn from your project? Will you be working alone or in collaboration with one other student? In what form will you present your work
- **An annotated bibliography** including at least three sources that will initially inform your work. The sources should include at least one text that was not assigned to the program. Annotated means that you have reviewed the works and written two or three sentences about how each relates to your project.
- **A description of the resources** you will need to develop the project, if any.
- **A project schedule** including a weekly timeline of activities you plan starting week five.
- **An assignment of tasks** if the project is collaborative.

During weeks 5, and 8 you will meet with me in and other in small groups to present your work in progress, get feedback and plan for the presentation.