

Craig Hunter ([hunter@mcb.harvard.edu](mailto:hunter@mcb.harvard.edu))  
Jim Mallet ([jmallet@oeb.harvard.edu](mailto:jmallet@oeb.harvard.edu))  
Alexa PÃ©rez Torres ([alexapereztorres@g.harvard.edu](mailto:alexapereztorres@g.harvard.edu))

## **Provisional course outline**

### **Grading (200 pts):**

#### **Participation (~35%)**

This graduate level course on Genetics, Evolution, and Genomics is designed to provide an introduction to these fields through lectures and the careful reading of selected primary literature articles. Discussion and interaction are an essential part of the learning experience, and active participation is required for assessing your understanding of the material.

- 1 pt/day for being reasonably on time
- 1 pt/day for asking or answering a thoughtful question.

#### **Critical Summaries (5%)**

Learning to read and understand primary literature is becoming increasingly challenging as the volume of papers increases. These two formal writing assignments are designed to help you reflect on the selected article and incorporate this reflection into your learning process for every important paper in your field.

The assignment is to evaluate the contribution of a single paper to the field. Imagine your audience is the editor of a major journal and they have asked you to review this manuscript for publication. The specific details of your criticisms (positive and negative) would fill the two pages that follow this short paragraph summarizing the contributions of this paper to the field. An outline and examples can be found in [files/class handouts/critical summary...]. Examples [1](#), [2](#), [3](#).

#### **Outline**

- Topic sentence consisting of a broad statement of the significant finding and or conclusion(s).
- A statement of the specific question and method of investigation.
- A summary of the **significant** findings/results that allow the conclusion.
- **Critical evaluation** of the

- o question (is it important and appropriate to the system?)
- o the methods (clean, interpretable and controlled?)
- o the conclusion (is it valid, under/over interpreted?)

- How did this change the field?
- Whatâ€™s next?

0-5 points will be awarded for each summary, assessed for correctness, completeness, and clarity. If submitted by the due date, we will grade the summary and provide comments on how to improve. You will have 10 days to revise the summary (appended below the marked version in the same document) for an improved score. To facilitate this process, please submit editable files (not PDFs).

#### **Short review and Peer review (10%)**

This 800-1000 word short review of a paper is organized similar to the critical summaries but with more space for background, important details, and criticisms (positive and negative). We will then anonymize your submitted report and assign each of you two reports for peer review (assessing correctness, completeness, and clarity). 0-10 points will be awarded for the review and 0-5 points for each peer review.

#### **Graphical Abstracts (15%)**

Synthesizing and summarizing content graphically has become an essential skill. With instruction from MCB Media Fellow Emily Rivard and our teaching fellow Alexa, and the staff of the Bok Center, you will use illustrator or an equivalent graphic design program to design and create two custom figures; one that summarizes a paper and another that captures a key concept about evolution. You will also use your skills to design an original figure to accompany your final paper. 0-15 points will be awarded for each graphical abstract. [Cell\\_Press\\_Graphical\\_Abstract\\_guide](#)

**The two final projects bring together the skills you have been practicing this semester with the added challenge of selecting important research articles.**

#### **Group Presentation on Genomic Tools (10%)**

This group presentation provides an opportunity for you to practice and receive feedback on your

presentation skills. Since your audience will not have read the papers, you will present the background, status of the field, and then recent advances (findings, methods, conceptual advance) that set the stage for what's next. These will be collaborative presentations by groups of 5-6 students. Each group will have 75 minutes for presentation and question time. 0-20 points will be awarded for the presentation.

### **Long Paper Review (25%)**

A 2000–3000-word review and one original figure in the style of a Nature News and Views review, focused on one pre-approved **recent** paper (approximately 50% background, 30% new paper, 20% assessments and conclusions). A draft or outline will be turned in 10 days before the due date. 0-50 points will be awarded for the review. Student examples can be found [files/class handouts/Final Paper - examples]. Examples [A](#), [B](#), [C](#), [D](#), [E](#).

**Due dates** are intended to maintain continuity with the material and skill progression and allow the teaching staff the time to evaluate your comprehension and adjust the pace/depth of the course. Critical summaries turned in on time will be returned with comments and can be revised and resubmitted within 10 days for an improved score. Late critical summaries cannot be revised and submitted. All late assignments will be docked 10% per day and will not be accepted after 7 days. Extenuating circumstances will be considered before, but not after the due date.