

## MCB 141 Course Schedule

**Professor Nipam Patel:** First third of the course: Introduction to Developmental Biology, Patterning of the Drosophila Embryo, Arthropod Evolution and Development

[Office hours, 910 AM Jan 23, 27, Feb 6, 10, 17; + Feb. 20 9 AMNoon] LSA 525A

Lecture 1, Tuesday, Jan 16. Introduction to Developmental Biology (pp 194)

Lecture 2, Thursday, Jan 18. Introduction to Drosophila Development and Genetics (pp 277-286)

Lecture 3, Tuesday, Jan 23. Anteriorposterior patterning of the Drosophila embryo. (pp 286293)

Lecture 4, Thursday, Jan 25. Segmentation of the Drosophila embryo. (pp 294301)

Lecture 5, Tuesday, Jan 30. Dorsoventral patterning of the Drosophila Embryo (pp 303307)

Lecture 6, Thursday, Feb 1. Regionalization of the Drosophila Embryo (Hox genes) (pp 301303)

Lecture 7, Tuesday, Feb 6. Evolution and Development of the Arthropod Body Plan (Chap 11 of Evolution textbook, see Additional Reading at bCourse)

Lecture 8, Thursday, Feb 8. Butterfly Wing Patterning (assigned papers, see Additional Reading at bCourse)

Lecture 9, Tuesday, Feb 13. Nipam's lecture 9

Lecture 10, Thursday, Feb 15. Midterm I: 11:1012:30 (covering Lectures 1-9)

**Professor John Gerhart:** Middle third of the course: Early development of vertebrates from the oocyte to the late neurula stage. (Reading shown for 11th Edition Gilbert and Baresi, and for 10th Edition, Gilbert)

Lecture 1, Tuesday, Feb 20. Chordates and vertebrates: defining traits, outline of amphibian development 611 [4246; 216217; 722; 725731; 742744])

Lecture 2, Thursday, Feb 22 Fate, competence, specification, determination. Discovery of Spemann's organizer. 1921; 112113; 241244; 255256 (1013; 2531; 5762. 304306)

Lecture 3, Tuesday, Feb 27. Cytoplasmic localizations, cortical rotation, and axis formation in the amphibian egg 9293; 242244 (8183; 136; 153158; 615619 and 291294; 302310).

Lecture 4, Thursday, Mar 1. Endomesoderm induction 9495; 257262 (155158; 311312) and formation of Spemann's organizer 261263 (312324).

Lecture 5, Tuesday, Mar 6. Gastrulation 9; 244252 (29; 295302).

Lecture 6, Thursday, Mar 8. Neural induction and neurulation 7980; 263272; 336 (312324; 375-381).

Lecture 7, Tuesday, Mar 13. Chick development and extraembryonic development 287297; 480482 (336 348; 501503; 45).

Lecture 8, Thursday, Mar 15. Mammalian early development 300313 (9296; 348368).

Lecture 1, Tuesday, Mar 20. Professor Richard Harland: Summary of amniote and mammalian gastrulation, overview of organogenesis – material not on Midterm 2

Midterm 2: Thursday, Mar 22, 11:10-12:30. (Note: Midterm 2 comes after Professor Harland's Lecture 1 on March 20th, but will not contain material from that lecture. Note--Midterm 2 is before Spring Break!)

Spring Break March 26-30

**Professor Richard Harland:** Final third of the course: late development of vertebrates-organogenesis, cytodifferentiation. Lecture notes and reading assignments will be posted later.

(Lecture 1, Tuesday, Mar 20. [see above] Summary of amniote and mammalian gastrulation, Overview of organogenesis)

(Midterm 2: Thursday, Mar 23 [see above]) and Spring Break March 26-30

Lecture 2, Tuesday, Apr 3. Embryonic signals and mesoderm induction.

Lecture 3, Thursday, Apr 5. Neural Tube: induction, morphogenesis, patterning, and differentiation.

Lecture 4, Tuesday, Apr 10. Neural Tube: cont'd.

Lecture 5, Thursday, Apr 12. Somite differentiation.

Lecture 6, Tuesday, Apr 17. Neural crest and placodes.

Lecture 7, Thursday, Apr 19. Muscle development.

Lecture 8, Tuesday, Apr 24. Limb development.

Lecture 9, Thursday, Apr 26. Endodermal derivatives and kidney. Summary of organogenesis

Reading/Review/Recitation week April 30-May 4.

May 3(?): Professor Harland's review session, 11am-12.30pm in 101 LSA.

Final Exam: Final Exam Group 13 Thursday, May 10, 2017, 8-11am.