

## Zoology 470 - 2017 Lecture Schedule & Reading Assignments

Note: Chapter references are from **Gilbert, 10e** or **Gilbert & Barresi, 11e**. Please omit *Sidelights & Speculations* (S&S) sections unless instructed otherwise. "Supplementary Readings" are available via Learn@UW.

### Introduction: The Nature and Tools of Developmental Biology

Lecture	Date	Lecture Topic	Readings 10e	Readings 11e
1	1/18	Introduction	Ch. 1, pp. 1-11, 12-16; P2, pp. 107-116	Ch. 1, pp. 1-11, 17-22; Ch. 2, 29-38
2	1/20	Intro (cont); genomic equivalence	Ch. 2, pp. 31-35; 49-51	Ch. 3, pp. 45-52
3	1/23	Genomic equivalence (cont)	Supplemental readings part 1	Supplemental readings part 1
4	1/25	Human cloning; intro to stem cells	Ch. 8, pp. 298-303 (skip S&S, p. 300); P3, pp. 319-322; 327-330; Ch. 16, pp. 598-600	Ch. 12, pp. 391-393, 395-396, Ch. 5, 143-146, 167-177
5	1/27	Human ES cells (cont)	Supplemental readings part 2	Supplemental readings part 2
6	1/30	Intro to mol. bio. techniques	Supplementary handout/podcast on molecular biology	Supplementary handout/podcast on molecular biology
7	2/1	<b>Ethics Discussion 1</b>	No additional reading	No additional reading
8	2/3	Intro to cell biology	Ch. 3, pp. 69-79, 84-86, 88-93	Ch. 4, pp. 95-102, 104-108
9	2/6	Cell biology (cont)	Ch. 3, pp. 99-102	Ch. 4, 115-130

### Preparing to Make a Body: From Egg to Zygote

10	2/8	Gametogenesis; <b>Quiz 1: Molecular Biology Techniques</b>	Ch. 1, pp. 10-11 (meiosis review), Ch. 17, pp. 610-612; 616-623; Ch. 4, pp. 117-123	Ch. 6, 205-212
11	2/10	Gametogenesis (cont); Fertilization	Ch. 4, pp. 123-129; DD: sea urchin fertilization	Ch. 7, 218-223
12	2/13	Fertilization (cont)	Ch. 4, 143-146	Ch. 7, 223-233, 239-247
13	2/15	Egg activation; <b>Quiz 2: Cellular Signaling Pathways</b>	Ch. 4, pp. 130-140; DD: sea urchin materials on egg activation	Ch. 7, 233-239
14	2/17	Egg activation (cont);	Ch. 4, pp. 146-147	Ch. 7, 247-248
15	2/20	Cleavage; <b>Problem set #1 due</b>	Ch. 5, pp. 153-158, 161-163; 179-182; Ch. 7, pp. 217-219; 242-244; 273-275; 286-287	Ch. 1, pp. 11-13; Ch. 8, pp. 255-258; Ch. 10, pp. 312-314; 326-327; Ch. 11, pp. 335-337; 368-369; Ch. 12, pp. 381-382; 391-393
16	2/22	Cleavage (cont)	DD materials	DD materials

**Review Session: Tuesday, Feb. 21 at 4:30 pm, room TBA**

**Exam 1: Wednesday, Feb. 22 at 7:15 pm, room TBA**

## Prelude to Axis Specification – Regulation of Gene Expression

17	2/24	Intro to gene expression; Transcriptional regulation	Ch. 2, pp. 36-39; 40-47, (+ S&S on p. 46)	Ch. 3, pp. 45-47; 50-66
18	2/27	Non-transcriptional regulation;	Ch. 2, pp. 51-65	Ch. 3. Pp. 69-85
19	3/1	Sex determination <b>Quiz 3: Cleavage patterns</b>	Ch. 14, pp. 519-532	Ch. 6, pp. 181-197
20	3/3	Sex determination; Germ plasm	Ch. 16, pp. 591-605	Ch. 202-205, Ch. 8, p. 267;
21	3/6	Germ plasm (cont.); Intro to morphogenesis	Ch. 5, pp. 158-161	Ch. 1, pp. 13
22	3/8	Blastomere specification and gastrulation in <i>C. elegans</i>	Ch. 5, pp. 170-177; <i>C. elegans</i> cheat sheet	Ch. 8, pp. 265-273; <i>C. elegans</i> cheat sheet
23	3/10	<i>C. elegans</i> (cont); <i>Drosophila</i> anterior-posterior axis (intro)	Ch. 6, pp. 179-186;	Ch. 9, pp. 277-288
24	3/13	Anterior-posterior patterning in <i>Drosophila</i> : maternal genes; <b>Quiz 4: Morphogenetic movements</b>	Ch. 6, pp. 194-204	Ch. 9, pp. 289-293
25	3/15	<i>Drosophila</i> : segmentation;	Ch. 6, pp. 204-213	Ch. 9, pp. 294-303
26	3/17	Sea urchin patterning/gastrulation; <b>Problem Set # 2 due</b>	Part II, pp. 112-116 (review); Ch. 7, pp. 217-232	Ch. 10, pp 311-318, 320-326
<b>UW Spring Break                      March 18-26</b>				
27	3/27	Sea urchins (cont); Intro. to amphibians;	Ch. 1, pp. 6-11; Ch. 8, pp. 241-244	Ch. 11, pp. 333-337, 343-348
28	3/29	Amphibian axis specification: early events; <b>Quiz 5: Fly A-P patterning</b>	Ch. 8, pp. 252-261	Ch. 11, pp. 348-354
29	3/31	Amphibians: early events (cont)	Ch. 8, pp. 251-265	Ch. 11, pp. 355-359
30	4/3	Amphibian axis specification (cont)	Ch. 8, pp. 266-271;	Ch. 11, pp. 359-364
<b>Review session: Tuesday, April 4, 4:30-6 pm, TBA</b>				
<b>Exam 2: Wednesday, April 5, 7:15-8:45 pm, TBA</b>				
31	4/5	Amphibian gastrulation	Ch. 8, pp. 245-251;	Ch. 11, pp. 337-343; 359-364
32	4/7	Gastrulation (cont); Organizer	DD: frog materials; frog axis cheat sheet	DD: frog materials frog axis cheat sheet
33	4/10	Other vertebrates: zebrafish and chick;	Ch. 8, pp. 271-282; Ch 9, 285-297	Ch. 11, 365-377; Ch. 12, pp. 379-391

34	4/12	Other vertebrates (cont): mammals; <b>Quiz 6: Frog gastrulation</b>	Ch. 9, pp. 298-311 (including S&S)	Ch. 12, pp. 391-401, 408-410
35	4/14	Mammals (cont); Left-right axis specification	Ch. 8, pp. 270-271; 280-281; Ch 9, pp. 297-298, 314-315	Ch. 12, pp. 390-391; 404-406
36	4/17	Preimplantation diagnosis/ <b>Ethics Discussion # 2</b>	Supplemental readings part 4	Supplemental readings part 4

### Building the Body: Organ Systems in Vertebrates

37	4/19	Neurulation, brains, and ectoderm	Ch. 10, pp. 333-345; 359-361	Ch. 13, pp. 413-434
38	4/21	Mesoderm;	Ch. 12, pp. 415-421; 420-426	Ch. 17, pp. 539-543, 548-549, 551-556
39	4/24	Mesoderm (cont); endoderm; <b>Ethics position paper due</b>	Ch. 12, pp. 432—434; Ch. 13, pp. 449-456; 457-458; 460-467;	560-562, 566-568, 572-574, Ch. 18., 591-594, 596-597, 600-605
40	4/26	Endoderm (cont); branching morphogenesis	Ch. 13, pp. 476-481; Ch. 12, pp. 434-435; 436-438	Ch. 20, pp. 653-661; Ch. 18, pp. 581-583, 585-586
41	4/28	Neural crest	Ch. 11, pp. 375-391	Ch. 15, pp. 463-468, 470-482
42	5/1	Axon guidance <b>Problem set # 3 due</b>	Ch. 11, pp. 394-405; 404-412	Ch. 15, pp. 488-490, 493-502, 504-508
43	5/3	Limb patterning	Ch. 14, pp. 489-514 (+ S&S on p. 506)	Ch. 19, pp. 613-617, 620-624, 625-630, 635-642, 645-646

**Review session: TBA**

**Exam 3: May 6, 2017, 2:45 - 4:45 pm, Room TBA**