BIO380HF—HUMAN DEVELOPMENT

Note: Students **are required** to read the specific on-line lecture material before coming to lecture. In lecture I will not review all of the details in that online material but will focus on the important concepts and their relevance. Students are responsible for the independently learning the self-study material in the designated lectures **(on-line self-study)** this material will not be discussed in lecture.

Professor Danton H. O'Day
LECTURE SCHEDULE 2011
Mondays/Wednesdays/Fridays 9-10AM IB120

Part I. From Primordial Germ Cells to Functional Gametes

Date	Lect. #	Title
Sept. 7	1.	Human Development: An Introduction & Overview
Sept. 9	2.	Experimental Techniques in Developmental Biology **(on-line self-study)**
Sept. 12	3.	Saga of the Sex Cells
Sept. 14	4.	Life & Death in the Ovary
Sept. 16	5.	Globospermia & ICSI: A Case Report **(on-line self-study)**
Sept. 19	6.	Egg Differentiation & Genetic Abnormalities
Sept. 21	7.	**1st Lecture Test**
Sept. 23	8.	Sperm Nuclear Condensation and Male Pronucleus Formation **(on-line self-study)**
Sept. 26	9.	Formation of the Male Sex Cells: Male Anatomy & Spermatogenesis
Sept. 28	10.	Formation of the Male Sex Cells: Spermiogenesis
Sept. 30	11.	Creating Transgenic Mice **(on-line self-study)**

Part II. Fertilization & Artificial Reproductive Technologies

Oct. 3	12.	Fertilization: The Sequence of Events
Oct. 5	13.	Fertilization: Intercellular Communication & Signal Transduction
Oct. 7	14.	Study break **(on-line self-study)**
Oct. 10	**15.**	***Thanksgiving***
Oct. 12	**16.**	**2nd Lecture Test**
Oct. 14	17.	Spina Bifida: The lemon sign **(on-line self-study)**
Oct. 17	18.	The "ART" of Making Babies

Part III. From Cleavage to Cell Differentiation

Oct. 19	19.	Early Development I: Cleavage
Oct. 21	20.	Neural Crest: Single Cell Population Produces Many Cell Types **(on-line self-study)**
Oct. 24	21.	Early Development II: The Blastocyst, Implantation & Extraembryonic Membranes
Oct. 26	**22.**	**3rd Lecture Test**
Oct. 28	23.	Morphogenesis: Mammary Gland Branching **(on-line self-study)**

Oct.	31	24.	Gastrulation: Formation of the Primary Germ Layers
Nov.	2	25.	Neurulation: Making the Brain and Spinal Cord
Nov.	4	26.	Analyzing Genes Involved in Eye Development **(on-line self-study)**
Nov.	7	27.	Critical Periods in Development
Nov.	9	28.	Nerve Cell Differentiation & Developmental Factors

Part IV. Induction & Organ Development

Nov.	11	29.	Limb Development: Events & Signal Transduction **(on-line self-study)**
Nov.	**14**	**30.**	**4th Lecture Test**
Nov.	16	31.	Development of the Eye: A Series of Inductive Interactions
Nov.	18	32.	Limb Development: Hox Genes **(on-line self-study)**
Nov.	21	33	The Neural Crest: From Pigmentation to Craniofacial Defects
Nov.	23	34.	Late Inductions: Hair, Teeth and Glands
Nov.	25	35.	Study break
Nov.	**28**	**36.**	**5th Lecture Test**

Textbook: There is no required textbook. Texts from previous years including “Larsen’s Human Embryology” by G.C. Shoenwolf et al, Elsevier Churchill Livingston, or “Human Embryology and Developmental Biology” by Carlson will be useful.