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Topic outline
1) Introduction to Molecular Analysis of Development
   - Descriptive embryology
   - Genetics and molecular biology
2) Programs and Regulatory Elements in DNA
3) Transcriptional Circuits - epigenetic regulation of gene expression
4) Gastrulation and early development - axis specification and formation
5) Features of Major Model Organisms - Mouse, Chick, Drosophila
6) Techniques for the study of Mouse Development: gene targeting technology
7) Receptors, Ligands
8) Cell-cell communication, Signaling Networks, Induction and Competence
9) Molecular Co-ordination of Cell Division and Differentiation (Myogenesis)
10) Focus on Paraxial Mesoderm, Somitogenesis and Patterning
11) Cell Death in Development
12) Lineage Generation
   - Embryonic and Adult Stem cell properties and lineage commitment
13) Cell Type Specification, Induction of pluripotency in stem cells (iPS)
14) Patterning in 1 and 2 Dimensions
15) Molecular and cellular basis of 3D Patterning
   - Heart development
16) Developmental mechanisms of evolutionary conservation and change

Evaluation
1 Test (prior to Reading week - date Thurs 13th Feb) 30%
1 Essay (HARD COPY due date 27th March) 30%
1 Test (Final in exam period date - TBA) 40%

Course Text: (10th edition available in York bookstore)
Developmental Biology
Companion web site: www.devbio.com
Scott F. Gilbert
Sinauer Associates, Inc
ISBN 0-87893-384-6