

Course Syllabus

1	Course title	Developmental Biology
2	Course number	0344763
3	Credit hours (theory, practical)	3,0
	Contact hours (theory, practical)	3hrs weekly
4	Prerequisites/corequisites	None
5	Program title	Master of biological sciences
6	Program code	0304
7	Awarding institution	The University of Jordan
8	School	Science
9	Department	Biological sciences
10	Level of course	Master
11	Year of study and semester (s)	2018/2019—second
12	Final Qualification	
13	Other department (s) involved in teaching the course	None
14	Language of Instruction	English
15	Date of production/revision	03/2020

16. Course Coordinator:

Hana Dawood Alebous
 Office number: Biological Sciences Building, Room # 113
 Office hours: Sunday and Thursday (1-2) , Tuesday (11-12)
 Phone number: 22239
 Email address: h.alebous@ju.edu.jo

17. Other instructors:

None

18. Course Description:

Gametogenesis, types and mechanisms of fertilization, molecular basis of fertilization, acrosomal reactions, capacitation, cortical granule reactions, molecular basis of morphogenesis, role of extracellular matrix in differentiation, epithelial-mesenchymal interactions and mechanisms of embryonic induction.

19. Course aims and outcomes:

<p>A- Aims:</p> <p>This course is a graduate-level introduction to the principles of developmental biology. It provides students with an understanding of the fundamental concepts and mechanisms that govern process of animal development. Topics, such as differentiation, morphogenesis, growth, and reproduction will be covered in this course.</p>	
<p>B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to</p>	
1-	Understand complete details about events in early and systematic embryological development including gametogenesis, fertilization, and implantation.
2-	Describe developmental stages in some invertebrate and vertebrate animals
3-	Knowledge and Understanding development and formation of human systems and organs
4-	Identify new signalling pathways in a complete organism
5-	Identify new genetic networks in a complete organism
6-	Describe how stem cells develop into differentiated cells and acquire their final identities
7-	Develop skills in critical reading of original scientific literature as well as skills in scientific presentations and writing term papers
8-	Understand the difference between specification and determination.
9-	Describe experiments that would help them to distinguish between when a cell has become specified and when its fate has become determined.
10-	Understand the Cell-cell communication in development
11-	Understand the Genetic Mechanisms of Sex Determination

20. Topic Outline and Schedule:

Topic	Week	Instructor	Achieved ILOs	Evaluation Methods	Reference
Questions Introducing Developmental Biology		Hana Alebous			Development Biology, Scott Gilbert
Developmental Anatomy		Hana Alebous			Development Biology, Scott Gilbert
Developmental		Hana Alebous			Development

Genetics					Biology, Scott Gilbert
Cell-cell communication in development		Hana Alebous			Development Biology, Scott Gilbert
Specification: Introducing Cell Commitment and Early Embryo Development		Hana Alebous			Development Biology, Scott Gilbert
Fertilization: Beginning a New Organism Gilbert		Hana Alebous			Development Biology, Scott Gilbert
Early Development of Selected Invertebrates		Hana Alebous			Development Biology, Scott Gilbert
The Genetics of Axis Specification in Drosophila		Hana Alebous			Development Biology, Scott Gilbert
The Stem Cell Concept Introducing Organogenesis		Hana Alebous			Development Biology, Scott Gilbert
The Emergence of the Ectoderm: Central Nervous System and Epidermis		Hana Alebous			Development Biology, Scott Gilbert
Paraxial and Intermediate Mesoderm		Hana Alebous			Development Biology, Scott Gilbert
Lateral Plate Mesoderm and the Endoderm		Hana Alebous			Development Biology, Scott Gilbert
Sex Determination		Hana Alebous			Development Biology, Scott Gilbert

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21. Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

1. lecturing
2. Discussion
3. Exams
4. Presentations and term papers
5. Audiovisual materials (Audio and Video)

22. Evaluation Methods and Course Requirements:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

1. Discussion
2. Exams
3. Presentations and term papers

23. Course Policies:

- A- Attendance policies: Regular class attendance is expected.
- B- Absences from exams and handing in assignments on time: Reporting a valid reason of absence is accepted.
- C- Health and safety procedures: All students should comply with the university Health and safety procedures
- D- Honesty policy regarding cheating, plagiarism, misbehavior: All students should comply with the university Honesty policy regarding cheating, plagiarism, misbehavior
- E- Grading policy: First hour exam 15 %, Second hour exam: 15 %, midterm exam, final exam 40%, presentation, term paper 15% and 15%, respectively.
- F- Available university services that support achievement in the course: Data Show Projector, internet access

24. Required equipment: (Facilities, Tools, Labs, Training....)

Data Show Projector, internet access

25. References:

- 1- Development Biology, Scott F. Gilbert, 11th edition, 2016
- 2- Principles of Development, Lewis Wolpert/ Cheryll Tickle
- 3- Essential Developmental Biology, Jonathan M.W. Slack

26. Additional information:

Name of Course Coordinator: Hana Alebous Signature: Hana Alebous Date: 03/2020

Head of curriculum committee/Department: Signature: -----

Head of Department: Signature: -----

Head of curriculum committee/Faculty: ----- Signature: -----

Dean: ----- -Signature: -----