



## SYLLABUS

Course Code	Course .Num	Course Name	Credit Hours	.Lec	.Lab	.Tut	Private study	requisites-Pre	Course Level	Teaching Language
BIO	415	Embryology	4	3	2	0	6	314BIO	7	English

### A. Description Course

This course is designed to provide MBS students with a foundation in human embryonic and fetal development from fertilization to birth. This course focuses on the morphological changes that take place during development. Underlying molecular mechanisms and relevant congenital anomalies may be briefly considered.

### B. Outcomes Course

At the end of this course the student will be able:

1. To define the basic concepts and principles of Embryology.
2. To describe the an understanding and appreciation of Embryo development.
3. To explain the basic cellular of determination and differentiation.
4. To explain the basic cellular of determination and differentiation.

### C. :References

#### Required Textbook

- *Scott .f. Gilbert Developmental Biology, 10<sup>th</sup> ed,(2013).* .٠٨٧٨٩٣٩٧٨٧-٩٧٨ :١٣-ISBN
- *Bruce M. Carlson MD PhD. Human Embryology and Developmental Biology: With Student Consult Online Access, 5e 5th Edition,(2013).* ١٤٥٥٧٢٧٩٤٠-٩٧٨ :١٣-ISBN
- *Pankai Talwar Manual of Assisted Reproductive Technologies and Clinical Embryology (2012).* .٩٣٥٠٢٥٥٠٦٣-٩٧٨ :١٣-ISBN
- *Laboratory Manual: Schoenwolf, G. C. 1995. Laboratory Studies of Vertebrate and Invertebrate Embryos.* .٣-٤٠٧٦٠٢-٠٢-٠ ed. Prentice Hall. ISBN<sup>th</sup>٧

#### :Other references

- *Essentials od Domestic Animal Embryology by Poul Hyttel et al.* ٢٠٠٩-SEP :Published (٢٠٠٩, ٦Dec ) .١-٢٨٩٩-٧٠٢٠-٠-٩٧٨ :١٣ ISBN ,١-٢٨٩٩-٧٠٢٠-٠ :١٠ ISBN
- *Atlas of Descriptive Embryology (Book Review), a Descriptive Embryology Atlas by Gary Schoenwolf and Willis Mathews.*2008.

Course Website: Google Classroom Webpage: <http://www.imamm.org/>



## D. Topics Outline

### topics Lectures .1D

1. *Introduction & Welcome to Embryology! The saga of the sex cells: gametogenesis overview. Female sex cells: oogenesis. Male sex cells: spermatogenesis & spermatogenesis. Transport of gametes & fertilization.*
2. *.Cleavage*
3. *Gastrulation - becoming trilaminar. Implantation Embryonic membranes.*
4. *.system Neurulation. Nervous .Twining*
5. *Maternal support & fetal interactions. Critical periods in development.*
6. *.Differentiation Determination and*
7. *.Regeneration .Organogenesis*
8. *Congenital Malformation. Embryonic cells and Tumor.*
9. *Tissues and Embryonic Cells Culture.*
10. *Stem cells. Assisted reproductive technologies.*

### Laboratories topics .2D

1. *Introduction to embryology and microscopy.*
2. *.anatomy Female and male*
3. *.motility Sperm*
4. *Frog cleavage, gastrulation, & neurulation (4.7.10mm)*
5. *.embryos Staging frog*
6. *.Limbs*
7. *.embryos frog mm 11 Live*
8. *.Digestive*
9. *Chick cleavage, gastrulation, & neurulation (33..48hr chick).*
10. *.chick hr-٧٢*
11. *.regeneration Planarian*
12. *.embryos Live chick*
13. *Finish planarian regeneration & checkout slides.*
14. *Introduction to embryology and microscopy.*



## E. Hours Office

Office hours give students the opportunity to ask in-depth questions and to explore points of confusion or interest that cannot be fully addressed in class.

## F. System Exams & Grading

The semi-official dates of the exams for this course are:

- **Midterm 1:** 6th or 7th week.
- **Midterm 2:** 11th or 12th week.
- **Quizzes & Homeworks:** During the semester.
- **Final lab. Exam :** 14th or 15th week.
- **Exam Final** .week th ١٦ :

Your course grade will be based on your semester work as follows:

<b>Midterm 1:</b> ١٥ %	<b>Midterm 2:</b> ١٥ %	<b>Final lab. Exam</b> : 20 %	<b>Final Exam</b> : ٤٠ %
<b>Homework, Attendance &amp; Participation 2 , Quizzes 2</b> : ١٠ %			

The grading distribution

+A	A	+B	B	+C	C	+D	D	F
[١٠٠, ٩٥]	(٩٥, ٩٠]	(٩٠, ٨٥]	(٨٥, ٨٠]	(٨٠, ٧٥]	(٧٥, ٧٠]	(٧٠, ٦٥]	(٦٥, ٦٠]	(٦٠, ٥٠]

## G. Student workload

#	Teaching/Learning activities	Contact hours	Frequency	Total contact hours	Self-study hours	Total self-study hours	Student learning time
5	Lecture	3	15	45	2	30	75
2	Tutorial	0	0	0	0	0	0
0	Lab\practical	2	15	30	1	15	45
5	Homework	0	4	0	2	8	8
4	Quiz	0.5	2	1	1	2	3
6	Midterm	1.5	2	3	5	10	13
7	Final Exam	2	1	2	12	12	14
<b>Total</b>				<b>81</b>		<b>77</b>	<b>158</b>

## H. Attendance/Absence Student

Only three situations will be considered as possible excused absences:

- Occurrence of a birth or death in the immediate family will be excused. ("Immediate family" is defined by the University as spouse, grandparents, parents, brother, or sister).



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- Severe illness in which a student is under the care of a doctor and physically unable to attend class will be excused. Students are not excused for a doctor's appointment. Do not make appointments that conflict with rehearsals. Notes from the University Health Center will be .accepted

### [Executive Rules for Study Regulations and Exams](#)

[tvt.goo.gl/ykm](http://tvt.goo.gl/ykm).www

