OFFICIAL UNDERGRADUATE COURSE OUTLINE (page 1)

COURSE IMPLEMENTATION DATE:	January 1996
COURSE REVISED IMPLEMENTATION DATE:	September 2014
COURSE TO BE REVIEWED:	March 2019
(six years after UEC approval)	*(month, year)*

OFFICIAL UNDERGRADUATE COURSE OUTLINE INFORMATION

Students are advised to keep course outlines in personal files for future use.

Shaded headings are subject to change at the discretion of the department – see course syllabus available from instructor

BIO 312	Biology	3
COURSE NAME/NUMBER	FACULTY/DEPARTMENT	UFV CREDITS

Developmental Biology
COURSE DESCRIPTIVE TITLE

CALENDAR DESCRIPTION:

Embryonic development is studied at various levels: organismal, cellular, molecular, and genetic. Both classical and modern experimental approaches using several model species will be described.

PREREQUISITES: One of BIO 202 or BIO 220, plus two other 200-level biology courses.
COREQUISITES: None
PRE or COREQUISITES:

SYNONYMOUS COURSE(S):
(a) Replaces: **N/A**
(b) Cross-listed with:
(c) Cannot take: **N/A** for further credit.

SERVICE COURSE TO: *(department/program)*

TOTAL HOURS PER TERM: **45**

STRUCTURE OF HOURS:

Lectures:	**45**	Hrs
Seminar:		Hrs
Laboratory:		Hrs
Field experience:		Hrs
Student directed learning:		Hrs
Other (specify): Tutorial		Hrs

TRAINING DAY-BASED INSTRUCTION:
Length of course:
Hours per day:

OTHER:
Maximum enrolment: **24**
Expected frequency of course offerings: Annually
(every semester, annually, every other year, etc.)

WILL TRANSFER CREDIT BE REQUESTED? (lower-level courses only)	☐ Yes	☒ No
WILL TRANSFER CREDIT BE REQUESTED? (upper-level requested by department)	☐ Yes	☒ No
TRANSFER CREDIT EXISTS IN BCCAT TRANSFER GUIDE:	☐ Yes	☒ No

Course designer(s): **Anthony Stea**

Department Head:	**Allan Arndt**	Date approved:	**October 30, 2012**
Supporting area consultation (CWC)		Date of meeting:	**January 11, 2013**
Curriculum Committee chair:	**David Fenske**	Date approved:	**January 25, 2013**
Dean/Associate VP:	**Lucy Lee**	Date approved:	**January 25, 2013**
Undergraduate Education Committee (UEC) approval		Date of meeting:	**March 1, 2013**

LEARNING OUTCOMES:

Upon successful completion of this course, students will be able to:

- compare and contrast how gametes are produced
- evaluate the mechanisms of fertilization at the cellular and molecular level
- examine the physical changes seen during the development of embryos
- relate the process of differentiation to differential gene expression
- differentiate the roles of cytoplasmic determinants, gradients, and cell-cell interactions on cell specification and pattern formation
- appraise and argue the roles of new reproductive technologies, such as IVF, embryonic stem cells, cloning, and pre-implantation genetics on human society

METHODS: *(Guest lecturers, presentations, online instruction, field trips, etc.)*

Lectures

METHODS OF OBTAINING PRIOR LEARNING ASSESSMENT RECOGNITION (PLAR):

☒ Examination(s) ☐ Portfolio assessment ☐ Interview(s)

☐ Other (specify):

☐ PLAR cannot be awarded for this course for the following reason(s):

TEXTBOOKS, REFERENCES, MATERIALS:

[Textbook selection varies by instructor. An example of texts for this course might be:]

Developmental Biology, 8th Ed. Scott F. Gilbert, 2006. Sinauer Associates, Inc

SUPPLIES / MATERIALS:

STUDENT EVALUATION:

[An example of student evaluation for this course might be:]

Quizzes	15%
Midterm exam	25%
Research paper presentation	15%
Final exam	45%

COURSE CONTENT:

[Course content varies by instructor. An example of course content might be:]

The following topics will be discussed:

- Model organism used to study developmental biology
- gametogenesis + fertilization
- cleavage + gastrulation,
- neurulation and organ formation
- vertebrate limb development
- apoptosis and development
- metamorphosis
- hox genes and animal development