

CATALOG YEAR 2015-2016COLLEGE/SCHOOL/SECTION: Arts and Sciences **Course:** Add: X Delete:
(check all that apply) Change: Number Title SCH Description Prerequisite **Response Required:** New course will be part of major X minor X as a required
or elective X course**Response Required:** New course will introduce X , reinforce X , or apply X concepts**Response Required:** Grade Type X Normal (A-F) CR/NC P/FIf new, provide Course Prefix, Number, Title, **Measurable** Student Learning Outcomes, SCH Value, Description, prerequisite, and lecture/lab hours if applicable. If in current online catalog, provide change and attach text with changes in red and provide a brief justification.

BIOL 4470

Developmental Biology

4 semester hours

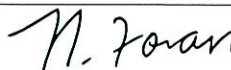
A study of the molecular and cellular events that lead to the generation of a multicellular organism from a fertilized egg. Emphasis on cell differentiation, development of an entire organism from a single cell involving several stages of differentiation and cell interaction. The course will investigate the cellular and molecular processes involved in generating an embryo, in creating various tissues and organs. Prerequisite: BIOL 3413. Lab Fee: ~~\$27.25~~30**Justification**

Adding course to catalog that is now being taught as a special topic course and is expected to be taught repeatedly.

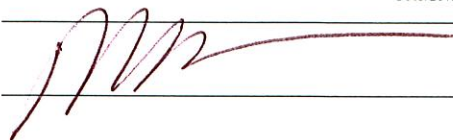
Approvals:

Signature

Date

Chair
Department Curriculum CommitteeNeal McReynoldsDigitally signed by Neal McReynolds
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Date: 2015.02.04 11:33:01 -06'00'Chair
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Date: 2015.02.23 10:18:45 -06'00'Chair
College Curriculum CommitteeFeb. 24/15

Dean

Frances BernatDigitally signed by Frances Bernat
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email=frances.bernat@tamui.edu, c=US
Date: 2015.02.24 16:53:46 -06'00'Provost
06/2014

Learning Outcomes:

Upon completion of this course, students will be expected to:

- Identify the genes and cellular mechanisms responsible for development.
- Indicate the cellular and molecular events involved in the generation and fusion of gametes prior to and during fertilization.
- Discuss the morphological changes that occur during early embryogenesis, including the events of cleavage, axis formation, gastrulation, and neurulation.
- Elaborate how tissue layers form and how different organs are derived from each embryonic layer.
- Discuss how gene expression and cell signaling regulate developmental processes, and how cells with identical DNA content can have different developmental fates.
- Explain the relationship between developmental biology and other branches of biology such as genetics, molecular biology, cell biology, and evolution.
- Acquire critical and creative thinking by engaging with the original scientific literature
- Produce critical essays from evaluation of original scientific literature in Developmental Biology.