CATALOG YEAR 2015-2016

COLLEGE/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/F

If 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

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

Approvals:

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<td>Neal McReynolds</td>
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<td>Department Curriculum Committee</td>
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<tr>
<td>Chair</td>
<td>Dan Mott</td>
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<td>Chair</td>
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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.