

## UMBC UGC Change in Existing Course: BIOL 405 – Advanced Topics in Comparative Physiology

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Proposed Effective Date: Spring 2016

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**COURSE INFORMATION:** (please provide all information in the “current” column, and only the information changing in the “proposed” column)

change		current	proposed
<input type="checkbox"/>	Course Number(s)	BIOL 405	
<input type="checkbox"/>	Formal Title	Advanced Topics in Comparative Physiology	
<input type="checkbox"/>	Transcript Title (≤30c)	Advanced Topics in Comparative Physiology	
<input checked="" type="checkbox"/>	Recommended Course Preparation	You must have completed BIOL 305, CHEM 351 and MATH 151	You must have completed BIOL 302, BIOL 303, BIOL 305, CHEM 351 and MATH 151 with a grade of “C” or better.
<input checked="" type="checkbox"/>	Prerequisite <b>NOTE:</b> Unless otherwise indicated, a prerequisite is assumed to be passed with a “D” or better.		You must have completed BIOL 302, BIOL 303, BIOL 305, CHEM 351 and MATH 151 with a grade of “C” or better.
<input type="checkbox"/>	Credits	4.00	
<input type="checkbox"/>	Repeatable?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/>	Max. Total Credits	4.00	<b>Max. Total Credits:</b> This should be equal to the number of credits for courses that cannot be repeated for credit. For courses that may be repeated for credit, enter the maximum total number of credits a student can receive from this course. E.g., enter 6 credits for a 3 credit course that may be taken a second time for credit, but not for a third time. Please note that this does NOT refer to how many times a class may be retaken for a higher grade.
<input type="checkbox"/>	Grading Method(s)	<input checked="" type="checkbox"/> Reg (A-F) <input type="checkbox"/> Audit <input type="checkbox"/> Pass-Fail	<input type="checkbox"/> Reg (A-F) <input type="checkbox"/> Audit <input type="checkbox"/> Pass-Fail

### CURRENT CATALOG DESCRIPTION:

This course takes a comparative approach to the study of how various selective pressures have resulted in the evolution of specific solutions to physiological problems. These solutions are viewed within the context of the fundamental limitations of biological evolution that are set by the physical and chemical properties of matter. The specific topic will change from semester to semester. Representative topics might include vision, temperature regulation and thermal tolerance, renal physiology or cognitive neurophysiology. Most of the material covered will be from original research reports that will be evaluated critically by each student. This course is repeatable for credit.

Recommended Preparation: [BIOL 305](#), [CHEM 351](#) and [MATH 151](#)

**PROPOSED CATALOG DESCRIPTION** (no longer than 75 words): leave blank if no changes are being proposed to the catalog description. NOTE: information about prerequisites should NOT appear in the catalog description.)

This course takes a comparative approach to the study of how various selective pressures have resulted in the evolution of specific solutions to physiological problems. These solutions are viewed within the context of the fundamental limitations of biological evolution that are set by the physical and chemical properties of matter. The specific topic will change from semester to semester. Representative topics might include vision, temperature

regulation and thermal tolerance, renal physiology or cognitive neurophysiology. Most of the material covered will be from original research reports that will be evaluated critically by each student. This course is repeatable for credit.

**RATIONALE FOR CHANGE:**

“The BIOL core courses are in a sequence BIOL 141-> BIOL 142 -> BIOL 302 -> BIOL 303, with BIOL 303 serving as a capstone course for the Biology core. The curriculum was designed such that only after completing this course and showing mastery of the core course content, would students move on in the major and take 400 level courses. However, we have a number of 400 level courses offered that do not explicitly require the content of BIOL 303 for student success in the course and therefore do not currently have it listed as an academic prerequisite. Some students have been taking these courses before completing BIOL 303 and the core, and some of these students have gone on to fail BIOL 303 two times, showing that they do not have mastery of the material and perhaps should be in another major. We would like to make BIOL 303 a prerequisite for all of our 400 level courses, regardless of content, to make this maneuver impossible. We prefer students to show they should be in the major before taking these upper level courses.”