Proposed Curriculum for an Undergraduate Certificate in
Conservation and Biodiversity

Rationale

The purpose for an undergraduate Certificate in Conservation and Biodiversity is to provide students with interdisciplinary training outside the boundaries of current Saint Louis University degree programs. There is no single undergraduate program that effectively prepares students for the interdisciplinary nature of a career in conservation biology. The need for a certificate program is driven by three factors: 1) a student’s need to provide prospective employers with effective credentials in the field of biodiversity conservation; 2) an employers need to be confident than a prospective employee has the skills and knowledge base to handle complex assignments at the interface of biology, economics, sociology and public policy; and 3) Saint Louis University’s need to attract the best available undergraduate students which we can accomplish by meeting the needs of both students and employers. The department of Biology currently attracts top high school students interested in health care; the proposed Certificate in Conservation and Biodiversity should help to attract top students interested in environmental issues.

Program Description

The purpose of the curriculum for a certificate in Conservation and Biodiversity is to go beyond existing degree programs in Biology that already provide students with the necessary coursework and research experience. The certificate curriculum requirements intend to help students reach a higher level of competence in conservation biology by expanding their grasp of the interdisciplinary nature of conservation biology. As such, the Certificate in Conservation and Biodiversity is a multidisciplinary program of study integrating theoretical and applied topics associated with the conservation of biodiversity. The certificate is intended for Biology majors interested in contemporary environmental issues that deal with the conservation of biological diversity. The certificate requires completion of 21 credit hours divided into a set of core and elective courses.

The Curriculum

The curriculum is divided into a set of core required courses, and elective courses. The core courses include a courses in Ecology and Conservation Biology and an internship in which the students gain hand-on experience. Numerous such opportunities exist in the greater St. Louis area with organizations such as the Saint Louis Zoo, the Missouri Botanical Garden, the Missouri Department of Conservation, St. Louis Audubon society. Elective courses are divided into a set of biology courses and a set of interdisciplinary courses from other departments. These courses both broaden the scope of study and provide an opportunity for students to select courses they find most useful.
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Core Required Courses (8-10 credit hours). Students must take the following three courses:

BIOL 475 Ecology (4 hrs)
BIOL 448 Conservation Biology (3 hrs)
BIOL 480 Internship in Conservation Biology (1-3 hrs)

[Note that prerequisites apply to all upper division Biology courses].

Elective Courses (11-13 credit hours). The remaining credit hours must be selected from the courses below. At least five credit hours must be taken from within biology (see list below) and at least six credit hours must be taken as interdisciplinary courses outside of biology, from at least two departments (see list below).

Non-listed courses require prior approval.

Biology Courses

BIOL 322 - Biology of Invertebrates
BIOL 326 - Plants and Fungi
BIOL 328 - Ethnobotany
BIOL 404 - Pollination Biology
BIOL 406 - Structure and Function of Ecosystems
BIOL 409 - Plant Ecology
BIOL 410 - Natural History of Vertebrates
BIOL 420 - Aquatic Ecology
BIOL 421 - Biology of Orchids
BIOL 424 - General and Medical Entomology
BIOL 426 - Biology of Reptiles
BIOL 428 - Biology of Fishes
BIOL 430 - Animal Behavior
BIOL 431 - Biology of Birds
BIOL 432 - Cave Biology
BIOL 433 - Spring Flora of the Ozarks
BIOL 438 - Biology of Mammals
BIOL 440 - Applied Ecology
BIOL 445 - Ecological Risk Assessment
BIOL 468 - Landscape Ecology

[Note that prerequisites apply to all upper division Biology courses].
Interdisciplinary Courses

Earth and Atmospheric Sciences

EAS 101 - Earth Systems I
EAS 103 - Earth Systems II

Economics

ECNB 190 - Principles of Economics

International Business

IBSB 200 - Introduction to International Business

Philosophy

PHIL 342 - Environmental Ethics

Public Policy

PPSI 400 - Politics and Ecology
PPSI 435 - Introduction to Geographic Information Systems

Sociology and Criminal Justice

SOC 120 – Introduction to Anthropology
SOC 325 – Primate Social Behavior
SOC 327 – Environmental Anthropology
SOC 454 – Environmental Impact

Theology

THEO 368 – Green Discipleship: Theology and the Environment