



NEW PROGRAM PROPOSAL FORM

Sponsoring Institution(s): Lindenwood University

Program Title: Environmental Sciences

Degree/Certificate: Bachelor of Sciences

Options: N/A

Delivery Site(s): St. Charles Campus

CIP Classification: 03.0104

*CIP code can be cross-referenced with programs offered in your region on MDHE's program inventory highered.mo.gov/ProgramInventory/search.jsp

Implementation Date: August 2017

Cooperative Partners: N/A

*If this is a collaborative program, form CL must be included with this proposal

AUTHORIZATION:

Marilyn S. Abbott, Provost and VPAA [Signature] 3/27/2017
Name/Title of Institutional Officer Signature Date

Ricardo Delgado, Dean of Sciences 636-949-4735
Person to Contact for More Information Telephone



STUDENT ENROLLMENT PROJECTIONS

Year	1	2	3	4	5
Full Time	10	20	30	40	50
Part Time					
Total	10	20	30	40	50

Please provide a rationale regarding how student enrollment projections were calculated:

Beginning year one, fall 2017, it is anticipated that the majority of students currently registered in Lindenwood’s BA Environmental Biology program will elect to change their majors to the BS Environmental Science program. This affects approximately eight to ten students. The program may also see incoming freshman, who become aware that Lindenwood can now offer a BS in Environmental Science. Beginning year two, fall 2018, it is anticipated that approximately 10 new students entering Lindenwood as freshmen will register into the Environmental Science program. It is also anticipated that each subsequent year will see 10 to 12 new students enrolling as freshmen into the program.

Provide a **rationale** for proposing this program, including **evidence of market demand and societal need supported by research**:

1) The primary rationale driving for development of this new program is projected employment needs. The outlook for employment in environmental-related positions is promising. The U.S. DOL (2016-17) reports that “Employment of environmental scientists and specialists is projected to grow 11 percent from 2014 to 2024, faster than the average for all occupations.” These positions have also been demonstrated to be

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high-paying positions. Median salaries are shown to range from \$60,280 for positions in state government to \$99,260 for positions in the federal government, with industrial and private sector salaries within this range. The median annual salary reported for all environmental positions was found to be \$67,460, as of May 2015. 2) An additional reason for Lindenwood to develop this program is that very few academic opportunities like this currently exist in the St. Louis area. Of all the universities in St. Louis, only one, Saint Louis University (SLU), offers a BS degree in Environmental Science. SLU has offered the BS degree for at least 10 years now; which reached a maximum enrollment in fall 2009 (42 students), but has steadily declined since, to 29 students in spring 2015 (personal communication). Some of SLU's students have opted instead to major in more formal Science areas, such as Biology and Chemistry, with an emphasis in Environmental Science. Besides SLU, there is only one other university in this region that offers a BS degree in Environmental Science: Southern Illinois University Edwardsville (SIUE). A disadvantage of the SIUE program is that for students living in the St. Louis/St. Charles area, it can mean a 70 mile commute, round-trip, to drive to the SIUE campus.

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Form SE - Student Enrollment Projections



PROGRAM STRUCTURE

A. Total credits required for graduation: 122

B. Residency requirements, if any: NA

C. General education: Total credits: 43

Courses (specific courses OR distribution area and credits):

Course Number	Credits	Course Title
GE-English	3	Composition (ENG/L 15000)
GE-English	3	Composition (ENG/L 17000)
Math	3	GE-Math
US History or Govt	3	GE-Human Culture; US History'/Government
Social Science	3	GE-Social Science
Natural Science w/Lab	4	GE-Natural Science Lab
Social or Natural Sci	3	GE-Social Science, GE-Natural Science, or GE-Natural Science Lab
Social Sci., Nat Sci, Math elective	3	GE-Math, GE-Social Science, GE-Natural Science, or GE-Natural Science Lab
Arts	3	GE-Human Culture: Arts
Literature	3	GE-Human Culture: Literature
Human Cultures Elective	3	Any GE-Human Culture
Non-Literature, Non-Arts Elective	3	GE-Human Culture: US/Government, World History, Foreign Language/Culture, Religion, Philosophy
GE Elective	3	Any course with GE designation
GE Elective	3	Any course with GE designation

D. Major requirements: Total credits: 73

Course Number	Credits	Course Title
BSC 24000	4	Intro to Biological Diversity
BSC 24400	4	Intro to Cellular and Molecular Biology
BSC 24800	4	Intro to Ecology and Evolution
BSC 26300	3	Environmental Policy
BSC 36200	4	Advanced Environmental Biology
CHM 23000	3	General Chemistry 1
CHM 23100	3	General Chemistry 2
CHM 23200	3	General Chemistry 3
CHM 24100	1	General Chemistry 2 Lab
CHM 24200	1	General Chemistry 3 Lab
CHM 35500 OR 36100	4	Analytical Chemistry OR Organic Chemistry 1
MTH 17300	4	Survey of Calculus
MTH 24100	3	Statistics for Natural Science
PHY 25100	4	Introductory Physics I
ESC 10000	4	Physical Geology with Lab

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ESC 11200	4	Fundamentals of Environmental Science
ESC 20000	3	Intro to Geographic Info Systems
ESC 32000	3	Hydrology
ESC 33000	4	Fundamentals of Soil Science
ESC 40000	3	Hydrogeology
ESC 41000	3	Environmental Fate of Contaminants

E. Free elective credits:

6

(Sum of C, D, and E should equal A.)

F. Requirements for thesis, internship or other capstone experience:

Field work

G. Any unique features such as interdepartmental cooperation:

Some courses to be cross-listed with Biological Sciences



PROGRAM CHARACTERISTICS AND PERFORMANCE GOALS

Institution Name Lindenwood University
Program Name Environmental Science
Date March 16 2017

(Although all of the following guidelines may not be applicable to the proposed program, please carefully consider the elements in each area and respond as completely as possible in the format below. Quantification of performance goals should be included wherever possible.)

1. Student Preparation

- Any special admissions procedures or student qualifications required for this program which exceed regular university admissions, standards, e.g., ACT score, completion of core curriculum, portfolio, personal interview, etc. Please note if no special preparation will be required.
None
- Characteristics of a specific population to be served, if applicable.
N/A

2. Faculty Characteristics

- Any special requirements (degree status, training, etc.) for assignment of teaching for this degree/certificate.
All full-time faculty must have a PhD in an area of science comparable to the courses to be taught by the department.
- Estimated percentage of credit hours that will be assigned to full time faculty. Please use the term "full time faculty" (and not FTE) in your descriptions here.
70-80% full-time faculty
- Expectations for professional activities, special student contact, teaching/learning innovation.
Full-time faculty will be encouraged to use innovative methods for delivery of content in their respective courses and any student led research will be supported.

3. Enrollment Projections

- Student FTE majoring in program by the end of five years.
The faculty project a student body of approximately 50 majors by year 5.
- Percent of full time and part time enrollment by the end of five years.

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The majority of students in the sciences are considered full-time and we project to see this trend of >90% full time students within 5 years.

4. Student and Program Outcomes

- Number of graduates per annum at three and five years after implementation.
By year three the faculty project to be graduating four to seven students per annum, and approximately eight to ten by year five.
- Special skills specific to the program.
none
- Proportion of students who will achieve licensing, certification, or registration.
None will achieve licensure or certification through Lindenwood.
- Performance on national and/or local assessments, e.g., percent of students scoring above the 50th percentile on normed tests; percent of students achieving minimal cut-scores on criterion-referenced tests. Include expected results on assessments of general education and on exit assessments in a particular discipline as well as the name of any nationally recognized assessments used.
We hope to achieve greater than 75% of students that may score above the 50% on assessment tests based on national tests.
- Placement rates in related fields, in other fields, unemployed.
Current faculty have close ties to local and state wide companies to aid in placement of students in their employment. While our school-specific rates are anecdotal, the Bureau of Labor Statistics shows the job outlook of Environmental Scientists and Specialists as growing at 11%, which is faster than average.
- Transfer rates, continuous study.
It is unknown on how new department will affect transfer rates, but these rates may be impacted by the reduction in the offerings by local universities.

5. Program Accreditation

- Institutional plans for accreditation, if applicable, including accrediting agency and timeline. **If there are no plans to seek specialized accreditation, please provide a rationale.**
The program has been approved to offer by Higher Learning Commission, Lindenwood University's accrediting agency.

6. Alumni and Employer Survey

- Expected satisfaction rates for alumni, *including timing and method of surveys.*

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We project high levels of students satisfaction to be seen in exit interviews and questionnaires. Lindenwood has also partnered with Gallup to study alumni and graduate experiences.

- Expected satisfaction rates for employers, including timing and method of surveys. There are no formal surveys planned for employers, except for informal conversation with local and state-wide companies with which students have been placed.

7. Institutional Characteristics

- Characteristics demonstrating why your institution is particularly well-equipped to support the program.

We have had an academically vigorous Earth Sciences department that has been offering Environmental Sciences courses to non-majors for many years. The faculty members of this department all have obtained their terminal degrees (PhD) from nationally recognized research universities and have published research in their respective areas of science.