

UNDERGRADUATE CURRICULUM FORMS

ILLINOIS STATE UNIVERSITY - NEW PROGRAM PROPOSAL

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New Undergraduate Program (Majors, Minors, Sequences) Proposal Illinois State University - University Curriculum Committee

Program Department [Geography, Geology, and the Environment](#)Submission Date [Wednesday, November 15, 2017](#)Initiator [Dagmar Budikova](#)Email dbudiko@ilstu.eduPhone [438-2486](#)Campus Address [4400 Geography - Geology](#)Initiator Department [Geography, Geology, and the Environment](#)Coauthor(s) [Eric Peterson](mailto:ewpeter@ilstu.edu), [John Kostelnick](mailto:jkoste@ilstu.edu), [Jill Thomas](mailto:jfthoma@ilstu.edu), [David Malone](mailto:dhmalon@ilstu.edu)Version **3**Title of New Program [Major in Environmental Systems Science and Sustainability \(E](#)Proposed Starting Catalog Year [2019-2020](#)

Associated Course Proposals

	Course	Title	Version	Proposal Type	Initiator
View	GEO 293	Career Preparation in Environment Systems	2	New Course	Dagmar Budikova
View	GEO 314	Aqueous Geochemistry	4	New Course	Catherine O'Reilly
View	GEO 317	Water Resources and Environmental Law	5	New Course	Wondwosen Seyoum
View	GEO 318	Aquifer Systems	3	New Course	Eric Peterson
View	GEO 319	Watershed Analysis and Hydrologic Modeling	4	New Course	Wondwosen Seyoum

1. Proposed Action

- New Major
- New Minor
- New Sequence
- More than 50% of courses in this program are Distance Education

No Is this program an Integrated Bachelors/Masters degree program?

Degree Type(s)

Bachelor of Science

2. Provide Undergraduate Catalog copy for new program.

MAJOR IN ENVIRONMENTAL SYSTEMS SCIENCE AND SUSTAINABILITY

Degree offered: B.S.

- Minimum 81 total hours are required.

- Required core courses (35 hours): BSC 201, ECO 101, GEO 100, 202, 205, 238, 293, 303, 398A02 (4 credit hours), PHI 236, POL 106.

- Other required courses (31-33 hours): BSC 196, 197, CHE 140, GEO 135 or 142, MAT 145, PHY 105 or 108 or 110; at least 2 courses from CHE 141, IT 165 or 166, MAT 146, PHY 109 or 111.

- Elective courses. (Students must declare one track in year 3. Five courses must be taken from one single track, adding up to a minimum of 15 hours):

- Track A - Generalist Track: 2 courses from BSC 202, 211, 223, 280, 311, 375, 376, CHE 215 (216 lab may also be taken), 220, 360 (361 lab may also be taken), 362 (363 lab may also be taken), GEO 276, 306, 314, 318, 341, 344, 360, 361, 380, 382, PHY 318 or CHE 318; 2 courses from ANT 273, 375, COM 274, ECO 236, 255, GEO 317, 334, PHI 250, 310, POL 236, 252, SOC 240, 302, 330; 1 course from GEO 304, 305, 308, IT 165 or 166.

- Track B - Water Resources: 5 courses from BSC 311, 375, 376, GEO 276, 314, 317, 318, 319, 360, 361

- Track C - Environmental Systems Analysis: IT 165 or 166; 4 courses from BSC 311, CHE 215 (216 lab may also be taken), 360 (361 lab may also be taken), 362 (363 lab may also be taken), GEO 304, 305, 306, 308, 314, 319, PHY 318 or CHE 318.

- Track D - Nature and Society: 1 course from ENG 145A13, COM 268, 274; 4 courses from ANT 273, 375, ECO 236, 255, GEO 317, 334, PHI 250, 310, PHY 207, POL 236, 252, SOC 240, 302, 330.

- Students are encouraged to pursue a minor in Biological Sciences or Chemistry or Physics or Mathematics. ESSS students may not minor in the existing Environmental Studies Minor program.

3. Provide a description for the proposed program.

This interdisciplinary program will prepare the next generation of environmental systems scientists and problem-solvers who appreciate the complex interactions between natural and human-social systems and the ensuing environmental challenges facing humankind in the 21st century. Students will learn about the importance of and best approaches to coping with these challenges in a sustainable and socially responsible way. Students will gain this understanding through the study of physical and life sciences, social sciences, humanities, mathematics, systems sciences, and sustainability. Students will also have the opportunity to acquire necessary integrated skills in informatics, laboratory and field research, systems thinking, project management, collaborative engagement, and technical communications.

4. Provide a rationale of proposed program.

Building on its long-standing and strong academic and research interests in the environment, the Department of Geography, Geology, and the Environment proposes a new undergraduate B.S. program in Environmental Systems Science and Sustainability (ESSS). The department currently offers about a dozen courses with an environmental focus, some of which have been part of our curricula for decades. Eight of our tenure-line faculty members pursue environmentally related research agendas and the department administers and provides advising for the interdisciplinary Minor in Environmental Studies. The introduction of a major program in environmental science is a natural step in the evolution of our department's mission, and the department is the most logical academic unit from which such a program ought to grow and in which it should be administered. The curriculum design is highly interdisciplinary, capitalizing on existing faculty talents from over a dozen academic programs across campus, including geography and geology. In our department the program takes advantage of our existing faculty interests and strengths in geo-spatial analysis, water science, and human-environment interactions. The curriculum offers a healthy balance between theoretical and applied approaches (including an internship program) to further ensure student success upon graduation. Employment potential for these graduates is predicted to be promising and healthy. We trust that ESSS will attract new student populations to ISU interested in issues related to environmental systems and sustainability that currently go elsewhere for their undergraduate studies. The curriculum of the envisioned ESSS program provides currently untapped opportunities for student learning and training at the University, builds upon existing academic offerings at Illinois State, and amplifies elements of Educating Illinois 2013-2018 in important ways. (for an expanded rationale see the Executive Summary section of the Environmental Systems Science and Sustainability Program Feasibility report).

5. Describe the expected effects of the proposed program on existing campus programs (if applicable).

ESSS is an interdisciplinary program that incorporates faculty expertise from several disciplines on campus including Biological Sciences, Chemistry, Physics, Mathematics, Geology, Information Technology, Economics, Philosophy, English, Communications, Political Science, Sociology/Anthropology, and Geography. The department has obtained letters of support from all of the above. These accompany this proposal and have been sent to the CCC chair, Sally Parry.

The Financial Implications Form signed by all parties also accompanies this proposal. Requested resources include 2 additional faculty lines (one has been approved for FY19), additional graduate assistantship support for BSC 201.

6. Provide a sample four year plan of study demonstrating that a student could realistically complete the program requirements in a specific number of semesters.

See attached pdf.

7. Describe the expected curricular changes required, including new courses. If proposals for new courses have also been submitted, please reference those related proposals here:

This proposal requests the establishment of a new major BS program in Environmental Systems Science and Sustainability. Its curriculum is interdisciplinary and incorporates faculty talents from many disciplines on campus. The following new courses are being established and accompany this proposal:

- GEO 293 - Career Preparation in Environmental Systems
- GEO 314 – Aqueous Geochemistry
- GEO 317 – Water Law
- GEO 318 – Aquifer Systems
- GEO 319 – Watershed Modeling
- GEO 398A02 - Professional Practice: Internship in Environmental Systems

8. Anticipated funding needs and source of funds.

Requested funding needs are outlined in the Financial Implications Form (attached to this proposal and signed by Dean and Provost) and include 2 faculty hires, one of which has been approved for FY19, and additional GA support for various classes.

9. No Does this program count for teacher education?

10. **No** Is this an Interdisciplinary Studies program?

11. **The following questions must be answered.**

Yes Have you confirmed that Milner Library has sufficient resources for the proposed program?

No Are more than 124 hours required to complete a degree with this major?

No Beyond General Education, does the major require more than 66 semester hours?

Yes Does this B.A., B.S., B.S.Ed. require more than 55 semester hours of major courses?

Yes Does this program stipulate specific general education courses offered in the major department/school as a part of the major requirements only if such courses serve as prerequisites for other courses required by the major?

Explain why specific general education courses are required.

GEO 202 Evolution of the Earth

GEO 135 World Geography OR GEO 142 Human Geography

These courses are most suitable to provide important content in areas not available in major classes at the lower levels.

No Is the proposed program intended to be longer than four years (as indicated by the plan of study)?

Yes Have letter(s) of concurrence from affected departments/schools been obtained?

A departments/school is affected if it has a program with significant overlap or if it teaches a required or elective course in the program.

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Financial Implications Form

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Executive Summary

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Upload Provost Approval Memo. Must be in Adobe PDF format. PDF cannot exceed 4MB in size.

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12. **Routing and action summary for New Program:**

[Proposal Routing](#)

1. Geography, Geology, and the Environment Department Curriculum Committee Chair

John Kostelnick (website)

Signature

John Kostelnick

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10/2/2017 12:08:21 PM

Date

2. Geography, Geology, and the Environment Department Chair/School Director

Dagmar Budikova (website)

Signature

Dagmar Budikova

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Date

3. College of Arts & Science College Curriculum Committee Chair

Todd Stewart (website)

Signature

Todd Stewart

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Date

4. College of Arts & Science College Dean

Sally Parry (website)

Signature

Sally Parry

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Date

5. University Curriculum Committee Chair

Jean Standard (website)

Signature

Jean Standard

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Date