This course proposal form should be completed when introducing a new course or a revision of an existing course. The proposal will be reviewed by the Committee on Curriculum, or, in the case of minor revisions, will be approved administratively by the Associate Provost for Instruction.

This Course Proposal must be completed according to the guidelines provided in Course Proposal Form – Instructions and Guidance. Please see the last page of Course Proposal Form – Instructions and Guidance, for instructions on how this Course Proposal should be submitted to the Committee on Curriculum for review.

Date: 9/10/18

1. Course Information:

1.1 Course Prefix and Number: SUS 350

Course Title: Introduction to Spatial Analysis & Geographic Information Systems

(If a new or renumbered course, please check with the Registrar regarding the use or reuse of the course number)

1.2 ☒ This is a New Course.

OR

☐ This is a Major Course Revision

OR

☐ This is a Minor Course Revision

If this is a Course Revision, please see Course Proposal Form – Instructions and Guidance to determine if your revision is major or minor. Indicate below the reason(s) for the revision.

(Please check all that apply)

☐ Course Number/Division ☐ Learning Outcomes ☐ Institutional Resources

☐ Title ☐ Concepts, Content ☐ Semester Offered

☐ Credit hours ☐ Catalog Description ☐ Course Inactivation

☐ Pre- or Co-requisite(s) ☐ Instructional Methods ☐ Course Reactivation

☐ Format ☐ General Education

1.3 General Education knowledge and skills area (if applicable): If none, check here X

☐ American History ☐ Humanities ☐ Other World Civilizations

☐ The Arts ☐ Mathematics ☐ Social Sciences

☐ Basic Communication ☐ Natural Sciences ☐ Western Civilization
2. Proposer Need Statement:

2.1 Describe why this course (or course revision) is needed to meet current or proposed goals and outcomes of the program or College, and, if a revision, provide an explanation of and justification for the revision.

This is a required course for the new online B.S. in Sustainability Management. This course serves as an introduction to how geography concepts and technologies are used to study complex interactions between the environment, the economy, and society, and their implications for sustainable development. This foundational course directly relates to Program Learning Outcomes 2 through 5, which focus on applying spatial analysis skills using qualitative and quantitative data to development solutions relevant to sustainability.

2.2 List the pre-requisite or co-requisite courses (taught within the home department or taught by another department) and explain their relationship to the proposed course.

None.

2.3 Explain the impact of this course in meeting the goals and outcomes of other Departments/programs (if any).

This course was designed to meet the goals and outcomes of the online Sustainability Management B.S. We do not expect enrollment from other departments or programs.

2.4 If the proposed course is designed to fulfill SUNY General Education Requirements, the Associate Provost for Instruction must review this proposal to ensure that General Education Requirements will be met for the specified knowledge area (See Instructions and Guidance).

Please provide an explanation of how this course fulfills SUNY General Education Requirements.

N/A

2.5 What are the staffing requirements (instructor, TA, Lab tech, etc.) for this course? If a new course, are there new staffing needs or are there adequate staff members already in place? If a revised course, are there additional staffing needs?

All required staffing is in place.

2.6 What Department (or extra-Department) resources are or will be made available to support the course or course revision?

ESF Open Academy staffing, supplemented by a SUNY Performance Improvement Fund award, are and will be available to support the course.

2.7 Anticipated Enrollment (enter where applicable)

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<thead>
<tr>
<th>Semester</th>
<th>Enrollment</th>
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<tbody>
<tr>
<td>Fall Semester</td>
<td>20</td>
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<tr>
<td>Summer Semester</td>
<td>20</td>
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<tr>
<td>Spring Semester</td>
<td>20</td>
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2.8 Anticipated frequency of class meetings. N/A, this is an online course.
3. DETAILED COURSE DESCRIPTION

3.1 COURSE IDENTIFICATION AND FORMAT:

3.1.1 Course Prefix and Number: SUS 350
3.1.2 Course Name: Introduction to Spatial Analysis & Geographic Information Systems
3.1.3 Credit Hours: 3.0
3.1.4 Semester (check all that apply): Fall X Spring X Summer X
3.1.5 Format (check as appropriate): Lecture ☐ Online ☒ Lab ☐ Field ☐ Other ☐ (explain)
3.1.6 Contact hours per week: Three hours per week
3.1.7 Prerequisite(s) – if none, please enter “None” (Be specific, as Upper Division courses and Graduate courses will likely have some pre-requisite knowledge) None

3.2 SCOPE:

3.2.1 Level of Instruction (check one, or two if a shared resource course):
   Lower Division ☐ Upper Division ☒
   Beginning Graduate ☐ Advanced Graduate ☐

3.2.2 Relation to curriculum or to other ESF or Syracuse University courses:
   a. Is this a required course? No ☐ Yes ☒
      If Yes, please list the program(s) for which it is a requirement: Sustainability Management
   b. Is this an elective course within your department? No ☒ Yes ☐
   c. Is enrollment in this course restricted? No ☐ Yes ☒
      If Yes, please explain: There is priority for online students enrolled in the Sustainability Management B.S. program.
   d. Are other ESF or SU courses similar or identical to this course? No ☒ Yes ☐
      If Yes, please identify the courses:
   e. Is this course a shared resource offering (i.e. is there a graduate or undergraduate concurrent offering)? No ☒ Yes ☐
      If Yes, what is the course number of the concurrent offering?

3.3 STUDENT LEARNING OUTCOMES:

Identify the student learning outcomes associated with this course.

Upon successful completion of this course, you will be able to:

1. Use GIS software and associated technology;
2. Acquire, create, and manage geospatial data for analysis;
3. Apply quantitative and qualitative spatial analysis tools to study complex interactions among human and natural environments; and
4. Propose spatial solutions to complex environmental and community development problems.

3.4 MAJOR CONCEPTS, PROCESSES or TOOLS:

Identify the course content and themes (e.g. Table of Contents) consistent with the learning domains and outcomes.

In this course, Student Learning Outcome (SLO) 1 allows students to develop general skills in using GIS software, SLO 2 requires them to research how to acquire, create and manage geospatial data for analysis, SLO 3 allows them to apply appropriate spatial analysis tools using the GIS technology, while SLO 4 allows them to propose spatial solutions to complex sustainability problems. All SLOs are consistent with Program Learning Outcome 2 through 5: (2) - Apply qualitative and quantitative skills appropriate to the sustainability field; (3) - Analyze data and develop reports and presentations; (4) - Work independently and collaboratively for effective
and successful project and people management; and (5) - Apply knowledge of principles and best practices to the analysis of real-world sustainability problems.

3.5 INSTRUCTIONAL METHODS:
Identify the methods used to meet the course outcomes, as well as the principal instructional methods. Read, view course materials and resources; download, install and use latest GIS technology to complete graded assignments; work individually and collaborate in small groups; active participation and engagement with course materials; online discussion forums. There will also be student to instructor and student to student interaction through discussions, assignments, and feedback.

3.6 CATALOG DESCRIPTION
Provide the course description using the precise format to be included in the ESF catalog (i.e. course number and title; format; brief description; semester(s) offered; and pre-/co-requisites). Please do not exceed 1000 characters.

SUS 350: Introduction to Spatial Analysis & Geographic Information Systems; Online; This course will introduce students to various types of spatial analyses, and provide students with an overview of GIS technology and applications, including the uses and limitations of geospatial data, remote sensing, and GIS software & associated tools. Specific examples of how GIS may be applied to sustainability solutions are included. Spring, with Fall and Summer as needed.
Pre-requisites: None
Note: Enrollment in the Sustainability Management major, or permission of Sustainability Management program advisor, is required.

3.7 COURSE HISTORY:
Provide the dates of prior approval of this course, and its revision history. N/A

3.7.1 Relationship to current ESF courses
This course is replacing a current ESF course □ YES ☒ NO
If NO, then proceed to section 4 below.
If YES, then provide below the number and name of the course to be deactivated and removed from the catalog once this course proposal has been approved:
Course Number (of the course to be replaced) N/A
Course Name (of the course to be replaced) N/A
If the course to be replaced is used by departments other than the department sponsoring this proposal, please indicate below which departments are affected and the date they were notified about the course replacement.
Department: N/A Date of Notification:
Department: Date of Notification:
Department: Date of Notification:
Department: Date of Notification:
4. Institutional Impacts:

This section pertains to forecasting institutional resource needs to support the course or course revision. Provide clear statements regarding the needs and current availability (or absence) of resources. Note that, if this is a course revision, only the impacts of the revision should be included.

Staffing needs: Staff is already in place.

Classroom resources (e.g. physical facilities in a laboratory, lecture hall, flexible space, academic computing): N/A

Technology Resources: Blackboard Learning Management System is already in place.

Computing Resources (software licensing, hardware, access): ESF Computer and Network Services (e.g., Office 365, E-mail), Blackboard is already in place, and Open Source GIS to be acquired by students.

Library Resources (subscriptions, services): Existing support, resources, and access for off-campus students.

Transportation Requirements (budget, fees, fleet vehicles): N/A

Forest Properties or Field Practicum Facilities: N/A
5. Health and Safety Considerations:

Will any of the conditions or situations outlined below be present in association with the course? Yes / No

5.1. Will substances with any of the following properties be used during instruction: flammability, toxicity, corrosivity, reactivity, registered pesticide, legally controlled, or other characteristics with the potential to cause harm or injury? ☐ / ☒

5.2. Will any physical hazards be present during instruction? (e.g., machines that need safety guards; razor blades or syringes; compressed gases, etc.). ☐ / ☒

5.3. Will any biological hazards be present during instruction? (e.g., handling animals (rabies or hantavirus); cultures or stocks of infectious agents (fungal spores, viruses, bacteria, etc.). ☐ / ☒

5.4. Will any radiation hazards be present during instruction? (e.g., radioisotopes, X-rays, ultraviolet rays, lasers, etc.). ☐ / ☒

5.5. Will any electrical equipment that, due to its design, location, or method of use, pose any threat to safety during instruction? (Give considerable thought to electrical use outdoors, or any potentially wet location.). ☐ / ☒

5.6. Will there be any personal safety issues related to the class? (e.g., due to time of day or location, at the end of any organized class exercise, will students be in danger of physical assault, etc.). ☐ / ☒

5.7. Will any students be driving official state or research sponsored land or water vehicles during any class or instructional exercise? ☐ / ☒

5.8. Will any type of personal protective equipment be necessary during class exercises? (e.g., hard-hats, eye/face protection, hearing protection, hand/foot protection, lab coat, visibility clothing, etc.) ☐ / ☒

If the answer was “Yes” to any of the HEALTH AND SAFETY questions, please explain:

For lab and field courses to which all answers are “no”, you should explain that here, also. Normally, we would expect some safety precautions for such courses. N/A
6. Coordination and Consultation

Emails/letters, as noted below and attached to this proposal, or signatures below, indicate that the affected departments, programs or units have been notified of this proposal and have had an opportunity to assess the impact of the proposal on their respective units.

**Affected Academic Department(s) or Program(s) – other than the sponsoring department:**

<table>
<thead>
<tr>
<th>Department/Program 1</th>
<th>Name of Chair/Program Director</th>
<th>Chair Signature</th>
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<tr>
<th>Department/Program 2</th>
<th>Name of Chair/Program Director</th>
<th>Chair Signature</th>
<th>Date</th>
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<tr>
<th>Department/Program 3</th>
<th>Name of Chair/Program Director</th>
<th>Chair Signature</th>
<th>Date</th>
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[if more than three Departments/Programs, please continue on a separate page]

**Other Units:**

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<th>Unit</th>
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<th>Date</th>
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</thead>
<tbody>
<tr>
<td>Associate Provost for Instruction &amp; Dean of the Graduate School (for Gen Ed courses only)</td>
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<tr>
<td>Registrar</td>
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<td>Library Director</td>
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<td>Computing and Network Services</td>
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<td>Environmental Health and Safety</td>
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7. Proposer Information and Sponsoring Department Chair
Affirmation:

Contact Person:
Name:  Douglas Johnston______________  Department: Landscape Architecture_______
Email:  dmjohnst@esf.edu______________  Phone:  315-470-6544_______________

This proposal has been reviewed and approved by the sponsoring Department. Affected departments have been notified and given the opportunity to provide feedback. Department resources are or will be made available to support the course, or a plan is in place to meet the resource needs as identified in the Institutional Impacts section of this proposal (see Section 4, above).

Name:  Chuck Spuches_______________________________________  Date:  9/13/18
Department Chair (or designated curriculum representative)
Signature:_________________________________________________________  Or letter attached ☒
Department Chair (or designated curriculum representative)

8. Approvals:

__________________________________________________  __________________
Curriculum Committee  Date

__________________________________________________  __________________
Faculty Governance  Date

__________________________________________________  __________________
Provost  Date