

Section 1. Proposed Course Outline (A general statement of course content that informs class syllabus



construction. Once approved, all sections of a given course must include this content, no matter which instructor teaches the course, or the mode of delivery. Divisions must include this new course outline in the Divisional Course Outline binder as required by COPPs.)

Course Number: **GIS 254** Full Course Title for print catalog: **Spatial Data and Scripting**

Abbreviated Course Title for Banner: **Spatial Data and Scripting** (30 character limit)

Prerequisites: GIS 246 , CS133P

Co-requisites:

Grade Option: ☒ Graded (with P/NP option) ☐ Pass/No Pass only

Number/Type Credits	Term Minimum Contact	Term Maximum Contact	11-Week Term Contact
4 Lecture	40 hours (lecture credits x 10)	48 hours (lecture credits x 12)	44 hours (lecture credits x 11)
__ Lec/Lab	__ hours (lec-lab credits x 20)	__ hours (lec-lab credits x 24)	__ hours (lec-lab credits x 22)
__ Lab	__ hours (lab credits x 30)	__ hours (lab credits x 36)	__ hours (lab credits x 33)
4 Total credits (sum)	40 Total hours (sum)	48 Total hours (sum)	44 Total hours (sum)

Course Description (1000 character limit):

This course will introduce students to automation of geoprocessing tasks using ArcGIS model builder and scripts. Students will learn how to work with attribute tables, customize data models, read and write text files, work with lists and create geometries.

Course Outcomes and Proficiencies

What will the student **know** or **be able to do** at the end of the course?

What **attitudes** related to the subject will the student hold?

Upon successful completion of this course, the student will:

- 1) Understand geospatial data structures
- 2) Understand how scripts fit into the ArcGIS geoprocessing framework
- 3) Be able to manipulate geospatial data using current GIS software interface.
- 4) Edit spatial scripts using proper syntax
- 5) Access geoprocessing tools and specify environment settings
- 6) Understand the ArcGIS toolbox and modeling structure
- 7) Be able to automate ArcGIS functionality.

Assessments Planned

What evidence will demonstrate that students have achieved course outcomes? (Assessment tools may include departmental tests, written products, portfolios, juried performances, quizzes and exams, or alternative assessments such as qualitative studies, capstone projects, external reviewers, etc.)

How each outcome will be assessed:

- | |
|---|
| Class activities and exercises. |
| Class activities, exercises and quizzes. |
| Class activities, exercises and quizzes. |
| Class activities and exercises. |
| Class activities, exercises and quizzes. |
| Class activities, exercises and quizzes. |
| Class activities, exercises and final projects. |

Course Content by Major Topics

What topics will be presented? What are the main activities of the course? What are the central themes? (See sample at <http://www.lanec.edu/cops/format3.htm>.)

Topics:

Topic 1 - Geospatial data structures (Vector, raster, and storage in databases/tables)

Topic 2 - Geoprocessing in ArcGIS

Topic 2 - Reading and writing text files

Topic 3 - Working with and creating geometries

Topic 4 - ArcGIS tools and modeling

Topic 5 - Error checking and documentation

Section 2. Proposal Information

Course Developer:

Adam Lake

Date: October 1, 2010

Catalog year to take effect:

2010-11

Type of Proposal

☒ New course

☐ Currently 199 or 299

☐ Experimental Course

☐ 199 Special Studies

☐ 299 Trends

☐ Revised course (If increasing credits, use credit change form)

☐ Reactivated course with no change

☐ Reactivated course with changes

Type of Course:

☐ Lower Division Collegiate (transfer)

☐ Professional/Technical (required or elective)

☐ Developmental, numbered below 100

Rationale:

How does this proposal further the goals of the program or department?

Spatial data – information connected to a physical location – is the basis of geospatial analysis. Being able to convert spatial data into a usable format is a critical skill for a GIS workforce. The ability to automate processes for data conversion and customization is a much-needed skill for a GIS technician or GIS analyst. Adding this course supports the goal of the program - to offer GIS courses that provide work-ready skills.

What assessment evidence supports this proposal?

The United States Department of Labor has identified Geospatial Technology as a high-growth industry stating that "Revenues from the public sector lead geospatial market growth and account for more than one-third of total revenue." (DOL, 2010) The need for a GIS &T workforce are seen in federal, state, and local governments as well as utilities, transportation, resource management, business and marketing. In short, the need for a geospatial workforce can be seen in nearly every professional sector. According to the DOL, the geospatial market is growing at an annual rate of approximately 35% a year, with commercial use growing at a rate of almost 100% a year. Additionally, our advisory committee asserts that the ability to use spatial queries and GIS specific programming will improve students' work readiness.

How do you know there is a demand for this course?

GIS classes have been offered for the last three years with growing enrollment. Several students who have finished the pathway certificate program have signed up for independent study classes to enhance their skills. Members of our advisory committee are interested in this course for their employees.

Section 3. Curriculum Equity (<http://www.lanecc.edu/cops/curric.htm>)

To promote an environment where all learners are encouraged to develop their full potential, this course will support Lane's Curriculum Equity policy in the following way(s):

This course will provide students with the skills to perform in depth analysis of socio-cultural data and spatial patterns.

Section 4. For revised courses only: PREVIOUS Catalog/Course Information:

Course Number: _____ Course Title in Banner: _____ (30 characters maximum)

Full Course Title in print catalog:

Prerequisites:

Co-requisites:

Grade Option: ☐ Graded (with P/NP option) ☐ Pass/No Pass only

**Number/Type
Credits**

Term Minimum Contact

Term Maximum Contact

11-Week Term Contact

__ Lecture	__ hours (lecture credits x 10)	__ hours (lecture credits x 12)	__ hours (lecture credits x 11)
__ Lec/Lab	__ hours (lec-lab credits x 20)	__ hours (lec-lab credits x 24)	__ hours (lec-lab credits x 22)
__ Lab	__ hours (lab credits x 30)	__ hours (lab credits x 36)	__ hours (lab credits x 33)
__ Total credits (sum)	__ Total hours (sum)	__ Total hours (sum)	__ Total hours (sum)

Course Description:

What will change? ☐ Course Number ☐ Title ☐ Course Description ☐ Credit hours ☐ Contact hours

Section 5. Support Courses (New Professional/Technical course proposals must complete.)

Professional/Technical courses are tracked within programs for purposes of Carl Perkins funding and budgetary planning. Indicate all degree or certificate programs for which this course will be required.

Program	Division

Section 6. Overlap Courses (New course proposals must complete.)

While overlap of course materials is not necessarily a flaw, duplication of course materials may lead to inefficient use of college resources. If there is overlap, the faculty of overlapping courses must agree on the extent of overlap and attach a rationale explaining its necessity.

Indicate all departments/courses that this course may overlap. Division Dean of existing course enters one of three options at right. Note: N/A is not an option.

Options:

1. Approved: course does not overlap.
2. Approved: overlap is acceptable. Rationale attached.
3. Disapproved: reasons attached.

Division	Course Number / Title	% Overlap	Option	Division Dean of existing course (Signature required for all options)	Date

Section 7. Qualification to fulfill degree requirements (complete all relevant forms, available at <http://www.lanecc.edu/currshed/drrcforms.htm>, and send to Mary Brau for the Degree Requirements Review Committee):

☐ Form(s) applying for the following degree requirement status have been attached. (Only check this box when forms have been completed and attached.)

AAOT, ASOT-Bus, OTM:

- ☐ Arts & Letters
☐ Social Sciences
☒ Science / Mathematics / Computer Science

AAOT:

- ☐ Ethnic/Gender/Cultural Diversity

AAS, 1-year and 2-year certificates:

- ☐ Human Relations

Section 8. Library Impact Statement

Under accreditation standards, Library consultation is essential for new programs, new courses and for substantively revised courses when the revisions entail any change in library use.

What assignments will require the use of library and information resources?

Each academic area has a Liaison Librarian (<http://www.lanecc.edu/library/services/liaison.htm>). Contact the designated librarian to discuss the library needs of your course. Please allow the librarian at least one week to assess library resources.

To be completed by Liaison Librarian:

☐ Library resources are adequate to support this proposal.

☐ Additional resources are needed but can be obtained from current funds.

☐ Significant additional Library funds/resources are required to support this proposal.

Liaison Librarian

Date

Section 9. Divisional Approval (To be completed by Division Chair and Administrative Assistant)

Human, Physical, and Financial Resources:

☐ Additional instructional costs (staff, materials, services or facilities) will be incurred to offer this course.

Source of funding:

☐ No additional instructional resources (staff, materials, services or facilities) are needed to offer this course.

Explain:

Required Certifications:

☐ We have developed minimum course certification standards according to the COPPs procedure "Instructor Qualifications: Credit," to be filed with OISS upon course approval.

☐ We have completed faculty certification form(s) for faculty qualified to teach this course, to be filed with OISS and Human Resources upon course approval.

Fees:

☐ We have completed fee rationale and fee request forms to be submitted to OISS upon course approval, in compliance with the COPPs procedure, "Fees: Special"

☐ No special fees will be required for this course.

Divisional Recommendation:

☐ The Division Chair and Administrative Assistant have reviewed this course proposal and kept a copy for divisional files.

☐ Faculty review of this course was completed within the division on ____ (date).

☐ Pass

☐ Do Not Pass

Administrative Assistant/Coordinator

Date

Division Dean

Date

Section 10. College Approval

Curriculum Committee Chair

Date

Executive Dean

Date

Curriculum Approval

Committee hearing:

Date

Vice President, Academic Affairs, Chief Academic Officer

Date