

Spatial Sciences Institute
University of Southern California

SSCI 412 GeoDesign Practicum

Spring 2016 — R 2:00–5:50 P.M.

Location: Allan Hancock Foundation (AHF) 145D

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1 Catalogue Description

SSCI 412L GeoDesign Practicum

Application of design concepts, planning protocols and spatial analysis skills to a complex planning or design problem sponsored by a local public, private or not-for-profit client in a studio setting.

2 Introduction

The topic for the 2016 practicum is the recovery of the Palos Verdes blue butterfly on the Palos Verdes Peninsula, California. The client is *Disney Conservation Fund* and its butterfly conservation initiative, which is implemented by Dr. Jaret Daniels at the University of Florida *McGuire Center for Lepidoptera and Biodiversity*.

The outline that follows provides the structure and rules that should be necessary to embark on this ambitious 15-week project. For a successful project, it is important that:

- Students operate independently as a professional team;
- All parties develop a high level of trust and spirit of collaboration;
- Students and faculty are responsive to clients while conducting independent research;
- Communication between parties is professional and frequent; and
- Students feel comfortable to make decisions, make mistakes, and learn from the experience.

2.1 Academic Units and Grading

Students will work in groups but will be graded separately. It is *not* required that all students in a project receive the same grade, although the instructor may choose to do so.

At the end of the semester, students are required to complete self evaluations and peer evaluations and submit them to their instructor by the last day of classes. The faculty will consider these evaluations in assigning grades.

Grades will not be assigned until the group has submitted and the instructor has approved the final report.

2.2 Student Time Commitment

Students should expect to devote, on average, 10 hours a week to their Group Project, although more hours can be expected. This time includes class meeting time and field trips as appropriate for each project. Progress on Group Projects should be evenly allocated over the semester to avoid excess workload during the last few weeks.

2.3 Required Work Products

The required work products for each group include:

- A literature review and project proposal
- Proposal presentation
- Draft report
- Final report, including an executive summary
- Presentation of the final report
- Peer evaluations

2.4 Authorship/Ownership

Each member of the group, along with the faculty instructor for that group, is an equal owner of the data collected during the project. That means that each member of the group can use the data even after the project has ended. Papers, posters, presentations, and other derivative products that arise from the data collected during the project must acknowledge every member of the group in a manner that is appropriate to the group's contribution to the derivative product.

2.5 Data Distribution

Datasets and processed datasets that may have been obtained/derived during your work may be licensed or copyrighted or confidential. You should *not* make them available to third parties without authorization from your faculty advisor *and* the original source of data. Also, data should not be placed online unless the advisor and the owner of data have properly approved doing so.

2.6 Use of Human Subjects

Faculty and students that engage in research involving human subjects must first obtain prior approval from the Institutional Review Board (IRB). "Human Subject" means a living individual about whom an investigator (whether professional or student) conducting research obtains (i) data through intervention or interaction with the individual or (ii) identifiable private information. This means that even if you are just going to be conducting a survey, you **MUST** obtain IRB approval in advance. Approval is required no matter who you will be interacting with — even your friends or family!

3 Course Outline

The course will be organized around the following topics.

Week	Topic	Deliverables
Week 1: 1/14	Introduction/Client Orientation	
Week 2: 1/21	Field Visit	
Week 3: 1/28	Attend GeoDesign Summit	
Week 4: 2/4	Work Session	Literature Review Due
Week 5: 2/11	Work/Discussion of Proposal	Project Proposal Due
Week 6: 2/18	Proposal Revision	Client Presentation and Discussion
Week 7: 2/25	Work Session	
Week 8: 3/3	Field Visit	
Week 9: 3/10	Work Session	
Week 10: 3/24	Work Session	Client Update
Week 11: 3/31	AAG/Independent Work	
Week 12: 4/7	Work Session	
Week 13: 4/14	Draft Report Discussion	Draft Report Due
Week 14: 4/21	Work Session	
Week 15: 4/28	Client Report and Discussion	Final Presentation to Client
Finals Week		Final Report Due

4 Important Dates

8/21:	Last day to register and settle without a late fee
1/11:	Spring semester classes begin
1/18:	Martin Luther King's Birthday; University holiday
2/15:	Presidents' Day; University holiday
3/13–20:	Spring Recess
4/29:	Classes End

5 Composition of Group Projects

5.1 Group Members

Each student is assigned to a group for the duration of the course. These groups will be selected by the instructor on the basis of expressed preferences and skills of the students.

5.2 Project Advisor

The instructor acts as the group advisor, and will actively monitor progress and provide technical assistance, expertise, and project evaluations. Project leadership and management and the quality of the final product are the students' responsibilities. The advisor meets with the group each week during the studio-style class period. The advisor may arrange for travel and facilitate interactions with the client and help to guide the scope of the projects. The advisor may offer reactive advice, reacting to activities in the group and giving advice when asked. The advisors may also give proactive advice regarding possible productive avenues for progress or regarding deficiencies and deadlines. It is important that students understand the role of the advisors and the limited, though important, role they play in directing the project.

5.3 Stakeholders and Clients

Projects will involve stakeholders (government agencies, industry, non-profits, and private citizens) and clients who have a considerable interest in the project and/or the resulting data. There may be confidentiality, proprietary data, legal, intellectual property, and/or political issues that will need to be carefully addressed by the groups. Students must respect the privacy of these stakeholders in a professional manner.

6 Required Work Products

6.1 Project Proposal

Each group prepares a prospectus for the project based on the needs of the client, their skills and aptitudes, and the available data. The elements of the project proposal will be:

- Title Page
- Introduction
- Literature Review (see below)
- Research Question(s)/Project Approach
- Methods
- Deliverables and Timeline
- Management Plan (see below)
- Literature Cited

The project proposal is limited to 20 single-spaced pages. This limit does not include the title page and literature cited. Further details and revisions of the proposal format may be provided by the group advisor.

6.2 Literature Review

One of the most important sections of the proposal is the background literature review. A considerable amount of the effort on the project should focus on obtaining relevant information, becoming extremely knowledgeable about the current state of knowledge related to a topic, and preparing a review of the literature as it relates to the project. The literature review should focus on peer-reviewed literature (journal articles, chapters from edited books, scholarly books) and government reports (which are often not peer-reviewed but are performed by credible scientists).

It is important that the literature review not be too narrowly focused. For example, if the group is analyzing improvements to transportation infrastructure, it will need to review literature related to that topic. In addition, if the group is going to be using scenarios as a tool for projecting future transportation needs, the literature search and review will also need to explore the use of this tool, even if the tool has never been used in transportation infrastructure studies before.

6.3 Management Plan

The Management Plan outlines a group's management structure and general plan for the form and function of their group. Ideally, the management plan will be completed within the first two weeks of the semester. It should specifically include:

Group structure and management. Includes a definition of the various "jobs" necessary to execute the project (e.g., publications manager, data/computing manager, project director, etc.). An organization chart is useful.

Meeting structure. How will meetings be run? Who calls meetings? Will some meetings include advisors and others not? Will minutes be taken and, if so, by whom?

Responsibilities of group members. Includes duration of positions in the case of rotating roles.

Systems to ensure deadlines are met.

Conflict resolution process. To deal with conflict within the group. A common problem in groups is the problem of the "slacker". It is better to decide on ways to deal with a slacker before anyone becomes a slacker. The starting point for dealing with a slacker is for the group to assume all or some of the responsibility for the problem. If there is a slacker, it is likely that the group is failing in some way to motivate that individual. The group's plan should first focus on motivating the individual. Methods for dealing with this problem include peer review, division of responsibilities, documentation of slacking behavior, and even the "firing" of a person from the group (though this action would need to be taken in concert with the instructors for the course).

Procedures for documenting, cataloging, and archiving information. Documents, contact information, messages, calendar, website, budget projections, and expenditures must be accessible to all Group Project members. This is an important task. If there are delays or failures, the entire project can be adversely affected.

Guidelines for interacting with advisors, clients, or consultants. What role will the advisors play? Do they want written progress reports? Do they want drafts of sections of the report? How much time do they require for document review? How frequently will you meet with your client? How will you keep your client informed of your progress? How will you deliver your product to advisors and clients—electronically or in hardcopy?

Overall expectations of group members and advisors. It is strongly recommended that you discuss expectations with your advisors. It will be useful to include in the management plan the expectations of the advisor, the expectations of students with regard to advisor involvement, and the grading criteria.

6.4 Proposal Presentation

At the scheduled time, each group will present their project proposal to the class and the client. The purpose of the review is for groups to gain critical feedback regarding their project's scope, the importance of the project, the proposed plan of work, and the potential implementation implications of the results. This review process will improve the real-world nature of the problems and solutions Group Projects pursue.

The proposal presentation should be approximately 20 minutes long with time for questions afterwards. One or two students should present; it is neither necessary nor advisable for every group member to speak.

6.5 Final Report

By the end of the spring semester, students must submit a final report of their group project. The deadline for the final report is firm. The final report provides a complete discussion of the project's goals, objectives, methodologies, and accomplishments.

Students should keep in mind that it is doubtful that they will be able to complete their reports by the end of spring semester if they do not present a high quality draft to the advisors by the time specified. Some advisors will expect drafts earlier and may require longer periods for review and comment than others. In general, students should expect that their advisors will require at least one week, but as many as two weeks, to complete a thorough review. It is likely that more than one iteration will be necessary before the advisors find the report to be acceptable. Thus, it is critical that students and advisors discuss and agree upon a realistic timeline and have consistent expectations in terms of turn-around time. The final report should not include information restated from the group's Management Plan.

The final report typically includes the following:

Title

Abstract (not to exceed 250 words)

Introduction

Methods

Results

Discussion

Literature Cited

Final reports must be free of typographical, formatting, and other errors. More details on final report format may be provided.

The final report should reflect that the group has 1) the ability to clearly articulate the problem orally and in writing; 2) the ability to clearly articulate the scope of the work; 3) the ability to clearly articulate how their work is related to larger related issue(s); and 4) the creation of original interpretations of the work of others and/or the generation of original data that leads to original interpretations.

Conclusions and recommendations in the report are to be based only on 1) original interpretation and synthesis of the work of others; 2) original data and interpretations of that data; and/or 3) a combination

of 1 and 2. The unsupported expression of opinion in the final report is not appropriate.

When monetary support has been provided, acknowledgement must be made to individuals and/or organizations for their support of the project. Individuals or organizations that have contributed non-monetary support in the form of time, information or useful advice, should also be acknowledged if the Group Project members and advisors agree it is warranted.

Individuals and organizations have the right to refuse being acknowledged. Prior to finalizing acknowledgements, the group must inform any person to be acknowledged of its intent to do so in the report.

Adherence to accepted rules of citation is required. Groups should use the citation format established by the Spatial Sciences Institute for its graduate programs. Only readily retrievable sources are acceptable.

6.6 Final Presentation

Groups will present their final results as part of the GeoDesign lecture series at noon on Friday near the end of Spring semester. These presentations should be polished, professional, and accompanied by high-quality and error-free graphics.

6.7 Client Presentation

A presentation of the project will be scheduled at the client's convenience. Groups will work with the client to arrange the scope, length, and format of this presentation (oral, written, poster, workshop, etc.).

6.8 Self and Peer Evaluation

Each individual in the group must complete a self evaluation and peer evaluations and submit them to the instructor by the last day of classes of the semester. Templates for these reviews will be posted to the course website.

7 Project Evaluation

Student performance in a Group Project is evaluated and graded based on demonstrated depth of understanding, critical thinking, interdisciplinary approach, originality, resourcefulness, professionalism, and communication skills. Specific criteria that faculty advisors will use in assigning project grades include:

1. A working understanding of the published literature and facts immediately relevant to the project. A literature review should be completed as part of the project proposal.
2. A critical perspective on the quality and shortcomings of prior work relevant to the project. This should include an identification of attempts to answer similar questions in other contexts.
3. A working understanding of the dimensions of the spatial, regulatory, scientific, and design issues of the project and an aggressive plan for integration of these perspectives into the project.

4. Originality of analysis, problem formulation, and scope of work. This should be demonstrated throughout the project.
5. Formation of working relationships with stakeholders and clients outside of USC. In some cases, outside advisors will be identified when the Group Project is proposed. In other cases, the students will have to identify stakeholders, sources of information, outside consultants, and/or experts who can provide benefit to the Group Project.
6. Resourcefulness. Throughout the project, students are expected to demonstrate initiative in finding information, identifying tools necessary to achieve their scope, seeking outside advisors, acquiring necessary funding, and establishing internships for themselves as appropriate.
7. Punctuality. Students are expected to deliver intermediate and final products on schedule.
8. Communication skills. Oral presentations and written reports should be well organized, scholarly, and well communicated.
9. Participation. Students are expected to participate and actively contribute in meetings, training sessions, and events.

8 Grading Scheme

Literature Review	15%
Project Proposal	20%
Proposal Presentation	5%
Draft Report	20%
Final Report	30%
Peer Reviews	10%

9 Textbooks

9.1 Required

McHarg, I.L. 1969. *Design with Nature*. Garden City, NY: Doubleday/Natural History Press.

Steinitz, C. 2012. *A Framework for Geodesign: Changing Geography by Design*. Redlands: Esri Press.

9.2 Recommended Reading

Arnold, R. 1987. Decline of the endangered Palos Verdes blue butterfly in California. *Biological Conservation* 40:203–217.

Johnson, J., Q. Sweeney, K. Virun, T. Wilson, Y. Xia, C. Taday, J. Jones, E. Lopez, M. Kim, N. Miyahara, N. Hubeek, S. Jabas, T. Regan, N. Wilson, and T. Longcore. 2013. Final Report for 2013 Palos Verdes Blue Butterfly Captive Rearing on Defense Fuel Support Point, San Pedro, California and The Butterfly Project, Moorpark, California. Pages 1–18. The Urban Wildlands Group (NAVFAC SW Agreement # N62473-12-2-2101), Los Angeles.

- Mattoni, R. H. T. 1993. The Palos Verdes blue, *Glaucopsyche lygdamus palosverdesensis* Perkins and Emmel. Pages 135–136 in Occasional Paper of the IUCN Species Survival Commission, No. 8. Conservation Biology of Lycaenidae (Butterflies) (T. R. New, Ed.). IUCN, Gland, Switzerland.
- Mattoni, R. H. T. 1995. Rediscovery of the endangered Palos Verdes blue butterfly, *Glaucopsyche lygdamus palosverdesensis* Perkins and Emmel (Lycaenidae). *Journal of Research on the Lepidoptera* 31:180–194.
- Mattoni, R., T. Longcore, Z. Krenova, and A. Lipman. 1998. Mass rearing the endangered Palos Verdes Blue butterfly (*Glaucopsyche lygdamus palosverdesensis*: Lycaenidae). *Journal of Research on the Lepidoptera* 37:55–67.
- Lipman, A., T. Longcore, R. Mattoni, and Y. Zhang. 1999. Habitat evaluation and reintroduction planning for the endangered Palos Verdes blue butterfly, Final Technical Report to California Department of Fish and Game. UCLA Department of Geography, Los Angeles.
- Longcore, T. 2004. Strategic plan for captive rearing and reintroduction of Palos Verdes blue butterfly. Page 11. The Urban Wildlands Group (Defense Logistics Agency Agreement # N68711-03-LT-C3003), Los Angeles.
- Longcore, T., and K. H. Osborne. 2013. Final report for 2014 Palos Verdes Blue butterfly adult surveys on Defense Fuel Support Point, San Pedro, California. The Urban Wildlands Group (Defense Logistics Agency Agreement # N62473-12-2-2101), Los Angeles.
- Longcore, T., and K. H. Osborne. 2015. Butterflies are not grizzly bears: Lepidoptera conservation in practice. In *Butterfly Conservation in North America* (J. C. Daniels, Ed.). Springer, New York.

10 Statement on Academic Integrity

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. SCampus, the Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions can be found at: <https://scampus.usc.edu/b/11-00-behavior-violating-university-standards-and-appropriate-sanctions/>. Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: <http://www.usc.edu/student-affairs/SJACS/>.

11 Students with Disabilities

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. More information about academic accommodations based on a disability can be found at: http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to an

instructor as early in the semester as possible. DSP is located in STU 301 and is open 8:30 A.M.–5:00 P.M., Monday through Friday. The phone number for DSP is (213) 740-0776.