



THE SCHOOL
FOR FIELD STUDIES

Directed Research

SFS 4910

Syllabus

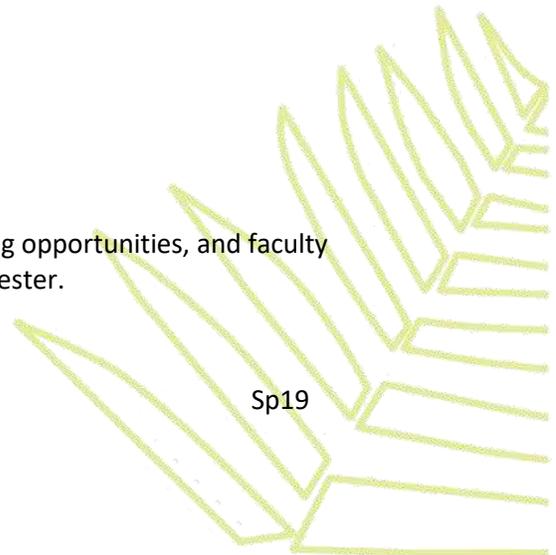
The School for Field Studies (SFS)
Center for Marine Resource Studies (CMRS)
South Caicos, Turks and Caicos Islands

This syllabus may develop or change over time based on local conditions, learning opportunities, and faculty expertise. Course content may vary from semester to semester.

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COURSE CONTENT SUBJECT TO CHANGE

Please note that this is a copy of a recent syllabus. A final syllabus will be provided to students on the first day of academic programming.

SFS programs are different from other travel or study abroad programs. Each iteration of a program is unique and often cannot be implemented exactly as planned for a variety of reasons. There are factors which, although monitored closely, are beyond our control. For example:

- Changes in access to or expiration or change in terms of permits to the highly regulated and sensitive environments in which we work;
- Changes in social/political conditions or tenuous weather situations/natural disasters may require changes to sites or plans, often with little notice;
- Some aspects of programs depend on the current faculty team as well as the goodwill and generosity of individuals, communities, and institutions which lend support.

Please be advised that these or other variables may require changes before or during the program. Part of the SFS experience is adapting to changing conditions and overcoming the obstacles that they may present. In other words, the elephants are not always where we want them to be, so be flexible!

Course Overview

The aim of this course is to provide students with the opportunity to apply ecological, biological, and/or social-scientific methods to a field research project that addresses a local issue related to the environment. This course teaches students data collection, data management, data analyzation, and scientific writing. Students will communicate their findings through a written paper, oral presentation and video. The directed research topics are derived from the SFS Center’s Five Year Research Plan as defined by the Center staff and local stakeholders. Through the Directed Research project, students will contribute to a growing body of scientific research that informs local conservation and resource management decisions.

Each student will join a faculty-led team that will carry out field research, data analysis, and communication of results in one or across several of the following disciplines: ecology, natural resource management, economics, and the social sciences.

Learning Objectives

In this course students will learn research design, field research methods, data management and analytical tools, communication skills and critical thinking, as well as team work and time management. Succinct scientific writing, graphic and tabular presentation of results, and effective delivery of oral presentations will be emphasized. The specific objectives of the course are the following:

1. Understand research design
2. Conduct field data collection
3. Manage and interpret data sets
4. Communicate research results to diverse audiences

CMRS Research Direction

The research agenda at the SFS Center for Marine Resource Studies is driven by the broad question of how TCI can better manage the marine resources and prepare the local community of South Caicos for the advent of mainstream tourism.

Assessment

Assessment Item	Value (%)
Literature Review	15
Proposal Presentation	15
Research Skills & Data Management	10
Final Report	30
Research Presentation	15
Research Video	15
TOTAL	100

Most assignments encourage you to work together, to share ideas and knowledge. This allows you to take advantage of the range of backgrounds within the group. Unless the assignment indicates that only one copy of the answers is required from the group, you are expected to complete your own assignment; directly copying answers from one another will be treated as cheating.

Literature Review (15%): The main objective of the *Literature Review* is that students familiarize themselves with previous research and publications in the area of their chosen Directed Research project. The literature review should draw upon a large literature base (where possible) – firstly to

review the current status of research in the field, and then to build a background and justification for research that still remains to be done.

Proposal Presentation (15%): Students will give a short presentation (1 per DR group) outlining background to their research, their research aim and methods they want to use to the public of South Caicos. The content should be easily understandable by the local community. Researchers often need support of the local community to successfully complete their research. Involving and informing the local community from the beginning of the research project will more likely give the researcher this support as the community feels more involved and heard.

Research Skills (10%): Your Directed Research skills will be graded throughout the semester by your supervisor. Your final grade will depend upon your attendance at all DR research group activities, active involvement and competencies in field data collection, data entry, and group participation/support.

Data Management: The data you collect during your projects are useful to SFS, to our clients and partners, and to future students. Therefore, it is important to store data in a manner that can be readily understandable by others. Good data management is also an important skill to develop.

Final Report (30%): The main objectives of the DR *Final Report* are to familiarize students with formal processes of writing scientific reports, which may include structuring and presenting your research findings in a standardized format consistent with the discipline. You will be assessed on your ability to (1) succinctly present your research hypothesis/question and the materials and methods used to collect data, (2) appropriateness of the quantitative &/or qualitative analytic techniques used, (3) appropriate presentation of results, and (4) adequate interpretation of results in light of the social and ecological contexts in which we work.

Research Presentation (15%): Students will present findings in a short and understandable way to an audience of faculty and peers. Students will be graded on their:

- Oral presentation skills.
- Time management.
- Focus on main results.
- Should include: Introduction, materials and methods, results, discussion.

Research Video (15%): Although peer-reviewed journal publications are the main route through which scientists disseminate their research findings, an increasing amount of effort is being put into making research results more accessible to a wider audience. In today's world, a wide variety of media options are available to facilitate such efforts, and it is not uncommon for funding-providers to require media products that can be shared with stakeholders and general audiences. Each DR group will produce a concise, three-minute video that summarizes their research for a diverse, non-scientific audience. This should include some background information (why the research was undertaken), an overview of the methods employed, the main findings and conclusions. Scientific jargon, details of statistical analyses, and complex graphs should be avoided. The video should be self-contained (i.e. the narration must be included), and it should consist primarily of footage from your fieldwork supplemented with additional supporting footage and images. The goal is to hold the audience's attention while getting your message across in an easily digested and understandable manner – be creative! Your videos will be played to the local community during an open-evening at the Center, and attendees will be given the opportunity to ask questions afterwards. You will be graded as a group on (1) video quality, (2) clarity of content, (3) creativity, (4) appropriateness for a general audience.

Grading Scheme

A	95.00 - 100.00%	B+	86.00 - 89.99%	C+	76.00 - 79.99%	D	60.00 - 69.99%
A-	90.00 - 94.99%	B	83.00 - 85.99%	C	73.00 - 75.99%	F	0.00 - 59.99%
		B-	80.00 - 82.99%	C-	70.00 - 72.99%		

General Reminders

Plagiarism - Using the ideas and material of others without giving due credit, is cheating and will not be tolerated. A grade of zero will be assigned if anyone is caught cheating or aiding another person to cheat actively or passively (e.g., allowing someone to look at your exam). ALL assignments unless specifically stated should be individual pieces of work.

Deadlines - Deadlines for written and oral assignments are instated for several reasons:

They are a part of working life to which students need to become accustomed and promote equity among students.

Deadlines allow faculty ample time to review and return assignments before others are due.

Late assignments will incur a 10% penalty for each day that they are late. No assignment will be accepted after three days. Assignments will be handed back to students after a one-week grading period.

Participation - Since we offer a program that is likely more intensive than you might be used to at your home institution, missing even one lecture can have a proportionally greater effect on your final grade simply because there is little room to make up for lost time. Participation in all components of the program is mandatory because your actions can significantly affect the experience you and your classmates have while at CMRS. Therefore, it is important that you are prompt for all land and water based activities, bring the necessary equipment for field exercises and Directed Research, and simply get involved

Course Content

Type- **L**: Lecture, **FEX**: Field Exercise, **DEX**: Desk Exercise, **P**: Presentation, **W**: Workshop

No	Type	Time (hrs)	Topics
DR01	L	1	Excel practical Basic excel skills that are useful for future assignments
DR02	EX	1	Scientific data organization Underwater slates Excel sheets
DR03	L	1	Basic Statistics A brief introduction to basic statistical theory and use of statistical software. It will assist in understanding the limitations of your data, and selecting the appropriate statistical tests.
DR04	L	1	Introduction to Directed Research and Research Ethics General overview of course components and expectations. Considerations of ethics in the social and biological sciences requirements for conducting fieldwork in the TCI
DR07	L	2	Scientific writing and literature search Explore the difference between primary and secondary sources; expectations and standards of practice; describe expectations for DR Papers. Construct a clear and concise research paper. Including sections. (Abstract, Introduction, Materials & Methods, Results, Discussion). Construct a clear and concise literature review
DR08	L	1	DR projects descriptions Faculty is presenting the different DR projects the students will be working on this semester and will lay out expectations for each project.
DR09	W		Project Selection Process Students submit preferences of projects they want to work on and are assigned to projects
DR10	DEX	2	Project Development and Proposal Group Discussion Groups for each project will discuss specifics to the research activities; Faculty will lay out expectations of student proposals and students and faculty will form discussion groups to further DR objectives
DR11	L	1	Experimental Design in Marine Ecology <ul style="list-style-type: none"> • Aims, objectives, and hypotheses • Practical considerations • Sampling designs • Choosing sampling methods
DR12	DEX	2.5	Literature Review work time Students will be informed where and how to obtain scientific research articles and other literature for their Literature review. Faculty will assist with what types of information may be useful and how to obtain information for inclusion to the paper.
Assignment			Literature review due 8 AM
DR 13	DEX	1	Methods discussion. Research groups will meet to determine which research methods they want to use.
Assignment			Proposal presentation to the community Research groups will present a short presentation outlining the background to their research, their research aim and methods they

			intend to use to the public.
DR14	FEX	0.5 days	Data Collection Practice Run and debrief Students will partake in a practice run for data collection. It will prepare them for consistent data collection.
DR15	FEX	11 days	DR Field Time
DR17	DEX	1	Data analysis DEX Desk exercise to get familiar with analysis programs and methods.
DR18	DEX	5 days	DR Data Analysis & Write Up
Assignment			DR final paper due 8 AM
DR19	L	1.0	Effective Scientific Communication Skills Students will understand the importance of practicing scientific communication skills and start to think about how to address different audiences
DR20	Ex	1.0	DR Oral Presentation Prep
Assignment			
DR21	P		In House Presentations
DR22	P		DR Open presentations or video showing to Local Community
		16.5 days + 16.5 hours	Total Time