THE SCHOOL FOR FIELD STUDIES

Directed Research
SFS 4910

Syllabus
4 Credits

The School for Field Studies (SFS)
Center for Environmental Justice and Mekong Ecologies
Siem Reap, Cambodia

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

www.fieldstudies.org

Center Research Direction

The Centre for Conservation and Development Studies is developing their research foci under three themes. These are in an ongoing period of review and extrapolation as the Strategic Research Plan is adjusting for the Centre with new faculty since the Covid hiatus. The directed research projects being undertaken this semester play a key role as scoping studies within these themes to refine the research direction and maximize the research output of the Centre.

Biodiversity Conservation and Ecology

This theme includes research topics such as:

1. Aquatic ecology and conservation
2. Terrestrial ecology
3. Ethology

Environmental Governance and Natural Resource Management

This theme examines the interactions between social and environmental factors in environmental conservation and development and includes research topics such as:

1. Community-based resources management
2. Waste and urban ecology

The Human Environment Nexus

This theme explores the relationship between communities and their environment such as:

1. Agroecological transition
2. Certification system and value-chain analysis
3. Livelihood diversification and transformation

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 prepares students to distinguish hidden assumptions in scientific approaches. We will also investigate the ways that various methods and theories distinguish (or do not) fact from interpretation, cause from correlation, and advocacy from objectivity. The Directed Research topics are driven by needs and interests of local stakeholders, partners, and friends of SFS in the Mekong region. Through the directed research projects, 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, livelihoods, and environmental ethics. The Directed Research course is designed to build on the information students have learned in the Ecosystems and Livelihoods, Conservation Science and Practice, and Environmental Ethics and Development courses as well as Directed Research lectures and workshops specifically designed to assist students in understanding the scientific process, testing hypotheses and presenting results in both written and spoken formats.

The research projects being conducted this semester will be elaborated and introduced to students by the faculty as the semester progresses.

Learning Objectives

The core skills students will learn in this course are field techniques, analytical methods, skills, and critical thinking, as well as teamwork, and time management. The specific objectives of the course are:

1. Understand the process of **designing** a field research project
2. **Conduct** field sampling
3. Manage, interpret, and analyze **data** sets
4. **Communicate** research results to diverse audiences
5. Manage teamwork within the context of **collaborative** research

Assessment

You will present your DR projects in the standard scientific formats of a peer-review style report and a conference style presentation. You will also be graded on your data management and your positive contribution to the class. Comprehensive details of all assignments will be provided separately, see below for the general descriptions and expectations.

Assessment Item	Value (%)
Project Proposal	10
Final Report	40
Presentation	20
Data Management	10
Directed Research Skills	20
TOTAL	**100**

Project Proposal (10%)

The project proposal component has three elements: a project proposal/research protocol which must be submitted but is ungraded, a draft of introduction and methods, and a draft of results/report outline.

1. **Project Proposal/Research Protocol**
   Each DR supervisor will work with students to prepare a brief DR project proposal setting out what each student intends to investigate and what general methods will employed and, depending on the form of the project, a research protocol that incorporates a topic guide.
2. **Draft Introduction and Methods**
   The draft introduction should be developed after reviewing relevant literature. One day is allocated for students to undertake a literature review. The main objective of the literature review is for students to familiarize themselves with previous research and publications in the area of their chosen Directed Research project. The introduction should draw upon a literature base (where possible) to firstly review the current status of research in the field and then to build a setting and justification for research that still remains to be done. The draft introduction should then establish the aims and objectives of the research
3. **Draft of Results/Report Outline**
   The main objective of the Report Outline is for students to provide a full draft of the results section and detailed framework of their discussion for feedback. It must include the draft introduction and methods sections along with a draft results section and a draft or an outline of the discussion findings.

Final Report (40%)

The final report is written in the style of a peer-review submission to a journal in the appropriate field. You will have ample opportunity for guidance from your DR supervisors throughout the DR period and especially during DR data analysis week. The analytical tools for research classes in the DR course (and complementary classes in other courses) are designed to prepare you for producing the Results section and improve the quality of your work.

Presentation (20%)

You will present a subset of your DR work in a conference style presentation of 15 minute length with additional time for questions. Unless the scope of your DR project is very small, you should not attempt to include everything from your final report into this presentation. Making sure that you are within the allotted time is a very important skill and thorough rehearsal is important.

Data Management (10%)

It is important to record and store research data in a manner that is useful. You will need to provide (as applicable) Excel sheets, interview transcripts, and coding families with your research data in a format that is intelligible to someone else. You may need to provide both raw and manipulated data you used to create figures, tables and to run statistical tests. You need to annotate your spreadsheets (use text boxes if appropriate) so that an outsider can understand what the data are. You may be required to provide field notes on your findings for review.

Directed Research Skills (20%)

Your Directed Research Skills will be graded throughout the DR course by your supervisor. Your final grade will depend upon your attendance to all DR activities, active involvement and competencies in field data collection, data interpretation and group participation/support.

Grading Scheme

A	95.00 - 100%	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	<60.00%
		B-	80.00 - 82.99%	C-	70.00 - 72.99%		

General Reminders

Intellectual Property – There are many implications about intellectual property and the use of data and research frameworks beyond your semester experience. Many DR projects form part of ongoing and developing research lines at SFS Centers, the work of which is the intellectual property of SFS faculty. However, faculty are always interested in continuing collaborations, and there is often the possibility for student *co-authorship* on future academic publications. We will discuss the ethics of data gathering and academic publications during the semester, but you can also review in advance SFS's data policy.

Honor Code/Plagiarism – SFS places high expectations on their students and we hold students accountable for their behaviors. SFS students are held to the honor code below. SFS has a zero-tolerance policy towards student cheating, plagiarism, data falsification, and any other form of dishonest academic and/or research practice or behavior. Using the ideas or material of others without giving due credit is

cheating and will not be tolerated. Any SFS student found to have engaged in or facilitated academic and/or research dishonesty will receive no credit (0%) for that activity.

> *"SFS does not tolerate cheating or plagiarism in any form. While participating in an SFS program, students are expected to refrain from cheating, plagiarism and any other behavior which would result in a student receiving credit for work which they did not accomplish on their own. Students are expected to report any instance of cheating or plagiarism by others."*

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. Grade corrections for any assessment item should be requested in writing at least 24 hours after assignments are returned. No corrections will be considered afterwards.

Content Statement – Every student comes to SFS with unique life experiences, which contribute to the way various information is processed. Some of the content in this course may be intellectually or emotionally challenging but has been intentionally selected to achieve certain learning goals and/or showcase the complexity of many modern issues. If you anticipate a challenge engaging with a certain topic or find that you are struggling with certain discussions, we encourage you to talk about it with faculty, friends, family, the HWM, or access available mental health resources.

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 SFS. Therefore, it is important that you are prompt for all DR activities, bring the necessary equipment for field research, and simply get involved.

Course Content

L**: Classroom lecture,** L/Demo**: Classroom lecture and demonstration**

DR Coursework Component: The coursework component of the DR is designed to prepare the students to conduct scientific research. The lectures are delivered throughout the semester, in conjunction with the topical courses, so that students are well prepared to work with their faculty mentor on meaningful research. Some of the course activities below will be delivered to the whole class, or as part of your specific DR group once you have selected a given project.			
No	***Title and outline***	***Type***	***Hours***
DR 01	**DR Course Introduction** In this class, each Faculty will do a 30-minute overview of their DR to enable students do an informed decision in selecting their DR choice	L	1.0
DR 03	**Introduction to the Scientific Method** Familiarize students with the process of science and associated methods	L	1.0
DR 04	**Introduction to Scientific Writing & Reading** Explore the difference between primary and secondary sources; expectations and standards of practice; describe expectations for the DR paper	L	1.0
DR 05	**Qualitative & Quantitative Research Methods**	L/Demo	2.0

	Lecture will introduce students to qualitative and quantitative research		
DR 06	**Research Ethics** The lecture will introduce students to the ethical considerations involved in research (e.g. human subject's protection, data integrity and management)	L	1.0
DR 07	**Risk & Time Management in DR** Will prepare students on how to manage risks in the field during data collection, and how to effectively manage the time allocated for the DR course	L	1.0
DR 08	**Effective Scientific Communication Skills** Students will understand the importance of scientific communication skills and start to think about how to address different audiences	L	1.0
DR 09	**Analytical Tools and Statistics** Students will learn the various methods that they will use to analyze and represent data from the field which suits their respective DR projects.	L/Demo	3.0
DR 11	**Project Development & Proposal** Faculty will lay out expectations of student proposals and students and faculty will form discussion groups to further DR proposals.	L/Demo	4.0
	Total	**15 Hours**	

DR Research Component This portion of the DR course is made up of research time, which includes data collection, synthesis, and dissemination. Given the intense nature of the Directed Research project, students receive over 140 contact hours during this period.	**Days Allocated**
Data Collection Students work within their DR group to go into the field to collect data	12 days
Data Synthesis Students work closely with their faculty mentors to analyze their collected data and write up their findings in a structured scientific paper	5 days
Research Dissemination Students prepare, practice, and deliver presentations for SFS and community audiences.	3 days
Total	**20 days**