

Research Methods Course
ACM/UDSM Tanzania Program 2009

CHESTER CAIN

Visiting Faculty Director, ACM ::::: Visiting Professor, Dept. of History & Archaeology, UDSM

In this course, students are expected to learn the following:

1. An understanding of how modern research is conducted
2. How to evaluate and discuss academic and applied research reports
3. Some basic methods of natural and social sciences
4. The skills necessary to carry out research from formulation to presenting the results

Classroom work, practice data collection in Dar es-Salaam, and independent research will all be part of the course. Attendance and participation in all classroom sessions is mandatory, plus there will be additional research advising sessions outside of class time. The mandate of this course is ambitious, but it will add to your experience of the Tanzania program. This course will help you decide if research and academic study are really what you want to do after college, it will be an asset if you go into personnel or business management or a clinical field since you will be able to handle large multi-step projects and control data, and it will help you be a better citizen since scientific research is meant to help you and is something you support with taxes (for example, will you be able to discuss different treatments for cancer when someone close to you is diagnosed?). The research we talk about and you carry out may be more specifically academic (meant to improve humanity's knowledge) or applied (meant to fix an immediate problem). This course is meant to be tough since it will change the way you think.

Students will be graded on the following items:

<i>Assignment</i>	<i>Points</i>	<i>Due Date</i>
Class journal entries	20	Various (before/in field)
Data collection exercises	20	Various (before field)
Draft of research proposal	5	8 Sep
Oral presentation of proposal	5	8/10 Sep
Research proposal (final)	10	3 Oct
Oral presentation of project (to 'community')	5	TBA/end of research period
Final poster presentation	5	Dec 11
Final project paper	20	Dec 10
Paper on helping other projects	10	Dec 11

"the box" is the 50 points for the research project

Evaluation: Success in this course is based on completing a well-thought out, well-executed and well-reported research project that covers something new and adds to our knowledge of our world. However, the process (especially as undergraduate students) is just as important as the product. Therefore, 50% of the course grade will be on your research project, and half will be related to activities that help you learn about research. Basically, if your project goes wrong, you may have learned quite a bit about research (and can get an OK grade in the class).

Here's how I expect the grading to go:

A's: did all of the preparation exercises really well, came up with a really well thought-out idea for the project, executed it well above the level typical for undergraduates (using student assistance and the resources of northern Tanzania), produced a paper and poster of high quality, helped with other people's projects & camping issues, was comfortable

with issues in the natural and social sciences, did more background work/reading than the average student, managed to excel even with the limited resources in Tanzania

B's: did all of the preparation exercises thoroughly, came up with a viable project, executed it well and got help from the instructor and other students when needed, produced a comprehensive written and poster presentation

C's: had a tough time with some of the exercises, did a project but some issues came up because of lack of preparation, completed the paper and poster reporting, contributed to other people's research, didn't use the assistance of instructors or students

D's: had problems with the required work, unprepared for many parts of the research project, turned in a paper or poster that is below college-level work, may not have helped in the field, possibly some late work

F's: late or missing work, unhelpful, unworkable or unexecuted project

No extra credit (I rarely get anyone other than A students doing extra work) or extensions will be given. *Unless otherwise noted, all assignments are due at the beginning of class. All assignments must be submitted on time (Late assignments will be penalized 50% per day). Readings from Hailman & Strier should be completed by the date listed below.* Also, because of the tight schedule only a limited amount of leeway can be given for illness; make an effort to keep yourself healthy for everybody's sake.

Text:

Planning, Proposing, and Presenting Science Effectively: A Guide for Graduate Students and Researchers in the Behavioral Sciences and Biology by Jack Parker Hailman, Karen B. Strier, 1st edition (or 2nd edition, but page numbers are different)

Additional Readings:

- Stephen J. Gould "Sex, Drugs, Disasters, and the Extinction of the Dinosaurs"
- You'll need to do lots of outside reading for this course: Both as examples of research and your own project. Some of these will be academic papers, and you should also use ACM projects from previous years. Professional papers will come from things you brought with, get from the UDSM library, borrow from Dr. Cain, or get online. Some examples are given at the end of the syllabus.

Additional Symposia:

- As we go through the semester, there will be a series of talks given about Tanzania and various academic topics to supplement the program and the course (These are mandatory, BTW).

Expectations:

Of students. Appropriate and courteous behavior, arriving on-time, and staying through the whole class. Be patient and flexible to problems caused by not being on your home campus, at UDSM, or in Tanzania. Respect the instructor's time and effort (the course and the program). Study all material assigned. Be prepared to contribute to discussions and activities when asked. Respect other people's ideas, backgrounds, and abilities. Value this educational opportunity for something other than a grade (For example, learn about teaching styles in different cultures). Be open to ideas other than those you are used to. Good spelling and grammar. Work completed at college-level. Hand things in on-time or accept the penalties. When explaining something, be clear and, when appropriate, use at least one example. Be reasonable in the schedule, scope, and methods of your project. Comply with academic integrity policies (a.k.a plagiarism). Work together. Have some fun with the rigorous demands of the course (and program). Not to endanger themselves, others, or the Program – physically, academically, interpersonally, legally, etc.

Of Dr. Cain. Give informative and useful course content. Give the students opportunities to practice skills and think independently. Give opportunities to let the students improve their written and oral communication skills and their ability to evaluate sources of knowledge. Include learning about Tanzania as part of the course. Timely feedback, and additional help when requested. Fair assessment and a reasonable amount of notice for changes to the schedule. Work with the student to find a feasible project that still interests the student. Accommodation of students needing academic alternatives if presented with specific documentation from the home campus. Be understanding of the foreignness of Tanzania and ‘doing research’ to the students. Guide the student in safe and ethical behaviors. Make sure the students and other staff are safe and productive in the field.

Issues specific to research projects:

Ethical protocols or guidelines will be followed in consideration of human subjects (anthropology, psychology, *etc.*), in care of animals (ecology), curation of collected cultural remains (archaeology), and collection of biological remains (palaeontology, biology, *etc.*). In consultation with the ACM, the student and the instructor will endeavor to follow the proscriptions of both the home campus and/or the relevant Tanzania authority. Because of the schedules of authorities (Human Subjects, *etc.*) on home campuses, limited nature of research projects, and communication issues; submission of ethic research procedures by the student will be sufficient for research to commence regrettably. Such statements will be parts of the students’ final reports.

The field work period is three weeks, however having more than a dozen students working at the same time will be logistically challenging. Every student cannot have a vehicle, guide, translator, park ranger, equipment, and park fees paid for all 21 days. If you divide it out, everyone should only get 2-3 days of field work. To make sure that the field work time is productive for everyone, I am requiring every student to figure out how other students can help them collect data in the field (thus everyone will get larger sample sizes). Also, I expect students to talk with each other to develop projects on the same subject (baobab trees, termite hills, lake margin geology, *etc.*) or in the same area (*e.g.*, village, stream, geologic exposure). In this way, a group of students can all go to a place and collect data at the same time. I (like most research granting agencies) will give extra consideration and resources to these collaborative-style projects. If you insist on a “lone wolf” project, you will have fewer days and fewer resources relatively.

I will give you help when I can. Sometimes you will have to be the one who has to ask for it though (I can make mistakes and have lots of responsibilities). When something is outside of my expertise, you hopefully have brought background research with you, plus you can use the limited library at UDSM and can talk to staff at UDSM or other researchers (museum, NGO, park staff, *etc.*) – if we can find someone appropriate and willing.

PLEASE NOTE:

- The three weeks after the field program go quickly!
- The more analysis and writing you do before and in the field, the better.
- *Don’t panic; be serious; have fun.*

COURSE SCHEDULE (Subject to change)

<u>Day</u>	<u>DATE</u>	<u>SUBJECT</u>	<u>READING</u>
1	20 Aug	Introduction and course outline Research design	
2	21 Aug	Evaluating research/peer review	Ch 1; “Sex, Drugs, Disasters, and the Extinction of ...”

3	25 Aug	Finding a topic	Appendix A
4	27 Aug	Science as a process and scientific methods	
5	1 Sep	Writing a research proposal: the motivation statement	Ch 2
6	3 Sep	Ethics in research	
7	8 Sep	~Draft Proposal due~ ~Proposal presentations (oral)~	
8	10 Sep	~Proposal presentations (oral)~	
9	15 Sep	Discuss presentations	
10	17 Sep	Statistical methods and sampling techniques	
11	22 Sep	Spatial analysis	
12	24 Sep	Observational studies Interview techniques; understanding human communities	
13	29 Sep	Scientific writing; geological/archaeological methods	Ch.3: 56-79 (just skim pp 79-89)
14	1 Oct	Writing a research report	
15	3 Oct	~Research proposals due~ Data presentation: figures and tables Discuss draft proposals and presentations	
16	8-11 Oct	Final field preparation Feedback on proposals Guidelines for oral presentations in the field	Ch. 4
***** FIELD WORK *****			
25 Oct - 15 Nov (dates approximate): Oral reports (to each other periodically & to locals)			
***** FIELD WORK *****			
17	24 Nov	Plan for rest of class	
18	26-7 Nov	Individual Research Meetings	
19	1 Dec	Discuss specific research issues	
20	3 Dec	Preparing posters	re-read sections of Ch3&4 (+App.A)
21	7 Dec	Review drafts	
22	10 Dec	~Final research paper, due no later than 9AM~	
23	11 Dec	~Poster presentations~ ~Paper on how you helped others~	

EXAMPLES OF JOURNAL ASSIGNMENTS:

- Walking around UDSM, make a list of things that could be studied or are tough to understand
- What are the differences you notice between the US and Tanzania? How does this relate holistically?
- Review an academic social science paper: What was the intent? What was the sample? What methods were used? How successful was the project? What are the implications of the paper?
- Review an ACM social science project: see above questions.
- Review an academic natural science paper
- Review an ACM natural science paper
- What are the difficulties associated with your proposed project?
- What are the ethical issues associated with your proposed project?
- How will you use other students in your project?
- What do you see as potential applied research projects that could be done in Dar or UDSM?

- Review someone else's project: Does it make sense, is it feasible, and what is the value of the research?
- Reflect on how you felt now that you have finished your first day of field work?
- How will you present your research to the local officials and general population in northern Tanzania?
- Reflect on your successes and difficulties in your field work project?

EXAMPLES OF DATA PROJECTS:

- Practice statistics worksheet
- Categorize and identification: Plants on the UDSM campus
- Map a section of UDSM
- Observational practice in Dar: Market, dala-dala stand, intersection... What are you studying and what method will you use?
- Animal survey on campus: Different groups do species list, transect, stratified sample, representative sample, and random observation/anecdotes
- Interview a UDSM student (Tanzanian or other African national): In English or Swahili? How to approach them? How did you establish rapport? What was simple to ask and what was difficult to get information on?
- Pick a street in Dar: study some aspect of it. What is the question? What is the method? What are the results?
- Use the method you will employ in the field on campus or somewhere in Dar. Problems? How long did it take? What are the issues that you might encounter in the field?
- Use your practice collection data to do the appropriate statistics and make some tables/figures.

EXAMPLES OF ACADEMIC WORKS TO HELP UNDERSTAND HOW RESEARCH IS DONE:

Jim Igoe's book: for various disciplines but especially for the range of social sciences
 "Doctor, Lawyer, Indian Chief" globalization, cultural anthropology, general social science
 "Eating Christmas in the Kalahari" anthropology & generally social sciences
 "Too Many Bananas" cultural anthropology
 "Psychotherapy in Africa" medical anthropology, cultural anthropology, applied science
 "Before: The Sixties" cultural anthropology
 Anthropology Fieldstudy: www.truman.edu/academics/ss/faculty/tamakoshi/index.html cultural anthropology
 Introduction to Anthropological Fieldwork and Ethnography: web.mit.edu/dumit/www/syl-anth.html cultural anthropology & general social science
 "Tricking and Tripping" cultural anthropology, medical issues, applied questions, general social science
 "Meeting the Maasai: Messages for Management" applied questions, general social science
 "Monkey Business in Bali" biological anthropology, primate studies, animal behavior
 "Dance of the Sexes" biological anthropology, primate studies, animal behavior
 "Close Encounters" biological anthropology, primate studies, animal behavior
 "Recovery and Identification of Civilian Victims of War in Croatia" physical anthropology, archaeology, political issues
 Articles from *Tanzania Notes & Records* cultural historical and natural science studies
 Articles from the journal *Geology* (try online?) geological projects
 Articles "mined" from previous ACM student projects large range of topics