DRAFT

**Resilience Research School**
**Course:** Resilience Research **(1.5 hp)**
**Time period:** Autumn 2012 (dates TBA)
**Course leader:** TBA

## Course description

### Course readings:


Alon, U. (2009) How to choose a good scientific problem. *Molecular cell*, **35**, 726-8.

Ellner, S.P. (2006) How to write a theoretical ecology paper that people will cite.

Erren, T.C., Cullen, P., Erren, M. & Bourne, P.E. (2007) Ten simple rules for doing your best research, according to Hamming. *PLoS computational biology*, **3**, 1839-40.

Lertzman, K. (1995) Notes On Writing Papers And Theses.

Powell, K. (2010) Publish like a pro. *Nature*, **467**, 873-875.

Roediger, H.L.I. Twelve Tips for Reviewers. *Observer*.

Sand-jensen, K. (2007) How to write consistently boring scientific literature. *Oikos*, 723-727.

Wells, W.A. (2004) Me write pretty one day: how to write a good scientific paper. *The Journal of Cell Biology*, **165**, 757-758.


### Background reading

These readings are suggested for students who have little prior exposure to resilience literature. You should discuss with your supervisor the amount of background reading you need before the course. We expect that you will be conversant with most of the concepts used and discussed in the resilience literature. These concepts include: resilience, adaptive cycle, alternative stable states, regime shifts, slow and fast variables, feedbacks, ecosystem services, and complex adaptive systems. These include: regime shifts, adaptive cycle, multiple stable states, ecological vs engineering resilience, slow and fast variables, feedbacks, ecosystem services, functional diversity and redundancy, complex adaptive systems (CAS), adaptive capacity, co-management/adaptive co-management.

Suggested background readings:

- Walker, B. and Salt, D. 2006. Resilience Thinking. Sustainable ecosystems and people in a changing world. Island Press.
- Carpenter et al (2001) From metaphor to measurement. Resilience of what to what? Ecosystems 4(8):765-781

# DRAFT

**Theory, method and applications to be used in the course**

| Concepts | Methods | Applications |
|---|---|---|
| Resilience and Social-Ecological systems Adaptive cycle | Developing research proposal | Development of research questions and methodologies |

The course stretches across five days (see schedule below). Students are expected to both participate in course activities and use non-course time to develop their writing and presentation assignments.

**Course schedule**

**Day 1: Discussion Seminar**
**Location: TBA**

Will discuss Alon paper and break into groups to brainstorm research questions.

Will break in to small groups to develop research proposals.

**Day 2: Discussion Seminar**
**Location: TBA**

Bring two copies of your small group one page research proposal

We will have peer review

And discussion of next steps

**Day 4: Discussion Seminar**
**Location: TBA**

Presentations of proposals

Peer review of proposals

Lessons learned.

DRAFT

We are expecting that students will meet and work on their proposals on Monday afternoon, Tuesday afternoon and during Wednesday and Thursday.

## Learning outcomes

Upon completion of this course students should:

1. Have a deeper understanding of strategies to write proposals and papers for resilience research

2. Be able to link general research questions to specific research questions, and specific research results to general questions

3. Develop and describe the methodologies to address research questions.

### Assessment and grading criteria

| | | Learning outcome | | |
|---|---|---|---|---|
| **Relative grading weight** | **Type of assessment** | **1** | **2** | **3** |
| 50% | Seminars | x | x | x |
| 50% | Written assignments | x | x | x |
| | | | | |

Participation in all seminars is compulsory. Participation does not only mean attendance, the participant must take an active role in the seminar. Failure to attend a seminar will result in a grade of Fail.

**Criteria for assessment:**
The following grades are issued, the lower limits for each grade is expressed as a percentage of the maximum points available:

P Pass – student shows proficiency in stipulated goals, and has full attendance
F Fail - Below 50% Poor or insufficient conduct

## Readings

### Read for Monday

Alon, U. (2009) How to choose a good scientific problem. *Molecular cell*, **35**, 726-8.

DRAFT

**Read for Tuesday**

Erren, T.C., Cullen, P., Erren, M. & Bourne, P.E. (2007) Ten simple rules for doing your best research, according to Hamming. *PLoS computational biology*, **3**, 1839-40.

Schwartz, M. a. (2008) The importance of stupidity in scientific research. *Journal of cell science*, **121**, 1771.

Sand-Jensen, K. (2007) How to write consistently boring scientific literature. *Oikos*, 723-727.

**Read before Friday**

Lertzman, K. (1995) Notes On Writing Papers And Theses.

Neill, U.S. (2007) How to write a scientific masterpiece. *Journal of Clinical Investigation*,**117**, 3599.

Powell, K. (2010) Publish like a pro. *Nature*, **467**, 873-875.

Roediger, H.L.I. (2007) Twelve Tips for Authors. *APS Observer*, **20**.

Roediger, H. (2007) Twelve tips for reviewers. *APS Observer*, **20**.

Schneider, G. (2011) How to Avoid the Seven Deadly Sins of Academic Writing. *European Political Science*, **10**, 337-345.

Wells, W. a. (2004) Me write pretty one day: how to write a good scientific paper. *The Journal of cell biology*, **165**, 757-8.