ENVS 992.6

Project in Environment and Sustainability

School of Environment and Sustainability

Term 3 2019-2020

MASTERS IN WATER SECURITY

UNIVERSITY OF SASKATCHEWAN

Course Coordinator	Karl Lindenschmidt	
	karl.lindenschmidt@usask.ca	
Course notes:	See course website http://bblearn.usask.ca	
Assessment:	Project Management Skills	20%
	Project report	50%
	Project presentation	20%
	Professional performance	10%
Prerequisites:	Registration in the MWS Program	

Calendar Description

The objective of this course is to allow students to investigate applied topics in water security, including scientific, technical, social, economic, cultural, institutional, or other appropriate aspects through the completion of a project. The project engages students in active, service learning and takes place in collaboration with a partner organization in industry, consultancy, governmental and non-governmental organizations.

Course Description:

In the first two-week period, students will be trained in concepts of leadership, communication, entrepreneurship, project and financial management. Subsequently, a team-based project will be undertaken, in which students work with a partner organization on a water security problem. Projects will be interdisciplinary in scope. Through active hands-on experience, students will be well-equipped to begin a successful career in water security. The project ends with a capstone event, attended by partner organizations and the SENS and GIWS community, where all students present their project outcomes.

Learning Outcomes

Over the course duration students will:

- Gain valuable practical experience and depth of understanding in the project area of focus.
- Contribute to the partner organizations objectives, including pushing forward research.
- Experience, understand and learn to manage team dynamics, including conflict.
- Develop critical thinking about connections between the subject matter of their studies and their experiences with partner organizations.
- Increase their awareness of community and opportunities for engagement.
- Have opportunities for practical application of theory.
- Develop an enhanced sense of independence and personal responsibility for learning and fulfilling the project outcomes.

Detailed course subject description

Overview

The ENVS 992 course involves two weeks of on campus training in areas around entrepreneurship and management, to provide students with a strong foundation for the subsequent interdisciplinary team projects, which are to be undertaken with partner organizations. Students will be provided with a list of potential projects, and will apply for a position on the projects they are interested in. In exceptional cases, where the student has been proactive in scoping out the project, individual projects may be acceptable, as long as there is a viable external partner and faculty advisor. In normal cases, students will be in groups of 2 – 5, where each individual in the team has a defined role in the project. The project duration is 15 weeks, and finishes in the final week of August, with a capstone event. Further details about each of these components are described below.

Project management short courses

This suite of five short courses will be coordinated by Dr. Graham Strickert. Each year, we will invite guest speakers to contribute different aspects of this, in particular faculty from the Edward's School of Business. In 2019 contributors we are seeking include Lee Swanson, Stephanie Young and Lindsay Tallon. Additional content will be delivered by Graham Strickert. The core course content is divided into five categories:

1. **Leadership**
2. **Communication**
3. **Entrepreneurship**
4. **Project management**
5. **Financial management**

Reading List for Short Courses:

Entrepreneurship:

Kahane, A., (2018) Collaborating with the Enemy: How to work with people you don't agree with or like or trust. Berrett-Keohler Publishers, Inc. e-book ISBN 978-1-62656-824-2

Kahana, T., (2018) Trust: Creating the Foundation for Entrepreneurship in Developing Countries. Berrett-Koehler Publishers. ISBN 10 – 1523094834.

Swanson L. (2018) Entrepreneurship and Innovation Tool Kit https://openpress.usask.ca/entrepreneurshipandinnovationtoolkit/ Ebook: ISBN 978-0-88880-615-4

Leadership:

Morelle, M., and Capparell, S., (2002) Shackleton's Way: Leadership Lessons from the Great Antarctic Explorer. Penguin Books, New York, New York.

Covery, S., (1989) The 7 Habbits of Highly Effective People. Free Press .

Greenleaft, R. K., (1977). A Journey Into the Nature of Legitimate Power and Greatness. Paulist Press, Mahwah, New Jersey.

Communication:

Strickert, G. E., & Bradford, L. E. A. (2015). Of Research Pings and Ping–Pong Balls: The Use of Forum Theater for Engaged Water Security Research. *International Journal of Qualitative Methods*, *14*(5), 1609406915621409.

Paternson, K., Grenny, J., McMillan, R., and Switzler, A., (2011) Crucial Conversations Tools for Talking When the Stakes are High . McGraw-Hill Co. ISBN 978-0-07-177132-0.

Cargnegie, D., (1936) How to Win Friends and Influence People. Simon & Schuster Publishers.

Team project

Project roles

MWS Program Director Andrew Ireson	ENVS 992 course coordinator, responsible for finding projects and partners, facilitating the matching of students with projects in teams, overseeing each student's progress with a monthly individual check-in (by email or in person), and organizing the capstone event.
Work placement coordinator	Works with the program director to find projects and partners and facilitate the matching of students with projects in teams.
Faculty advisor Various SENS faculty	Each team will have a faculty advisor who will coordinate with the partner organization to mentor the team to success. This will involve bi-weekly updates (by email or in person) from the team, with the faculty member providing timely and meaningful feedback.
External advisor From partner organization	A member of the partner organization who is the primary contact for the student team, organizes resources for the students (data, software, literature, other), facilitates meetings with the student team and organization, as appropriate, and helps determine the project deliverable such that it is useful to the partner organization. There should be bi-weekly (by email or in person) from the team, with the external advisor member providing timely and meaningful feedback.
Student	Individual students are to take personal responsibility for their engagement in the team project. Each student will have an individual deliverable, as well as a group deliverable, and must work in a professional manner with their team-mates, advisors and the program coordinator.

Project matching

Stage 1. In December, students complete the following questionnaire about their aspirations:

MWS Student Questionnaire:

1. *In terms of the range of content that we cover in the MWS, what area is of most interest to you?*
2. *Do you know what sector you wish to work after your MWS – consultancy, government, industry, academia, NGOs?*
3. *Do you know specifically what kind of job you would like – and if so can you provide some details, including the role (management, technical expert, etc)?*
4. *Where would you like to work: anywhere, in Saskatchewan, Canada or internationally (list ideal countries or areas. If you have specific organizations in mind, please list here)?*
5. *Would you to work in the field or in the office?*
6. *Do you want to be your own boss, work for a small company, or be part of a larger institution?*
7. *Anything else you would like to mention about your future plans, not captured above?*

These responses will be used by the program director to assist in the project matching process and follow up on any additional suggested projects that the students may provide.

Stage 2. In January, the program director and work placement coordinator will have compiled a number of suitable projects with partner organizations. For each project the following information will be compiled in a database:

Partner project database details:

1. *Project title*
2. *Partner organization name, location, and type*
3. *Partner contact details*
4. *Faculty advisor*
5. *Project location, and working arrangements if students not based on campus*
6. *Location and approximate timing of any field work*
7. *Brief description of the problem to be addressed*
8. *Brief overview of the methods and disciplines that will be employed*
9. *List of any required resources, and how these will be provided (e.g. travel funding, equipment, software, etc.).*

The database will be shared with all students, and they will be invited to apply for projects, either individually, or in self-organized groups.

Stage 3. In February, the students apply for the projects. The application process is designed to emulate the job market and provide valuable job seeking experience to the students. The students must provide a short cover letter and a curriculum vitae. The most compelling applications will be offered interviews by the advisors, and those that pass the interview successfully will be given the projects of their choice. The program director will oversee this process to ensure that the process is fair and that all students get projects that are acceptable to them in the end. In advance a session provided by the Student Employment and Career Centre will be arranged to assist the students in preparing for the application and interview process.

Stage 4. In March, the students will be matched with projects and students and advisors will be notified. At this point, it is acceptable for the advisors (faculty and external) to provide reading materials to the students, but it is not expected that any project work will be undertaken until the start of the team project, defined in the important dates on page 1 of the syllabus.

Working on the team project

Students are expected to work full time (around 40 hours a week) for the 15-week duration of the team project. The working arrangements (office space, location, field work logistics) are to be determined by the team, faculty advisor and external advisor. These arrangements must be documented in the project plan, which is to be drafted in the first two weeks of the project and included in Appendix A of the final project report. The plan should include specific deliverables with deadlines, and individual's tasks. You will not lose marks in your project for not sticking rigidly to the original plan, but you should demonstrate in your reports (see next item below) that you have adapted and updated your planning as events and the project unfold.

Students are expected to manage their activities. As a team, students must report to their advisors on a bi-weekly (i.e. every two weeks) basis, with a concise report that addresses each of the following headings:

Heading with the project title, report number, date, student names.

1. Work completed in the last reporting period
2. Team meetings held in the last reporting period (dates, times, attendance)
3. Planned work for the next reporting period
4. Information requested from advisors or partners

5. Summary of any challenges
6. Summary of progress against the project plan

This report can be short and relatively unpolished (these are live working documents and should reflect that), but must be clear. The report can be shared by email. These reports will also go into Appendix B in the final report.

Project deliverable

All student projects will deliver a report conforming to the content requirements laid out below. Word document templates will be provided, which include the font styles to be used, the MWS logo and text. These reports will be archived electronically in SENS, and publicly available through the SENS website, which is why adherence to the style and content guidelines is so important.

Header page: Page 1. Title, student names, date of project, name of partner organization, name of faculty advisor, standard MWS logo and text.

Executive summary: Page 2. Assume that 90% of readers in future will only read this – must summarize the problem, what you did, how you did it, what you found, and what still needs to be done.

Table of contents: Page 3.

Introduction: Description of background to the problem, including a literature review. May include a short profile of the partner organization and their specific problem. End the introduction with a set of project objectives.

Site description: If applicable, the location of the field site where the project was based must be provided, with site coordinates (northings, eastings) and if applicable/available, an overview of the climate, vegetation, hydrology, geology, soils, and land use.

Next, ***individually authored sections*** should be included, which describe in detail the methods and results of various aspects of the work. In each case, the author should be identified, and each team member should lead one section. These sections should not exceed 6 pages in total, including figures, and can include any of the following:

Field work: Describe any field work that was undertaken, including the rationale, the experimental design, description of instrumentation, results, interpretation and conclusions. You must be concise. If additional details are generated which will be useful to future workers, these can be included in an appendix (after Appendix B).

Modelling exercise: Describe the objective of the modelling exercise, describe the model used and any relevant methods, provide results and a conclusion. You must be concise. If additional details are generated which will be useful to future workers, these can be included in an appendix (after Appendix B).

Data analysis: If a substantial component of the work involves statistical analysis of existing data, which could include environmental, economic or social data, and could be time series data or spatial (GIS) data, this should be written up as a separate section. Include the objectives of the analysis, the data available (including the source of the data), quality assurance and quality control activities that were performed on the data by you, methods of analysis, results, including figures, interpretation and conclusions. Often appropriate plots of data are preferable to formal statistical analyses. You must be concise. If additional details are generated which will be useful to future workers, these can be included in an appendix (after Appendix B).

Social engagement activity: If a social engagement activity is part of your project, (e.g. use of social surveys, focus groups, workshops in communities) you must obtain appropriate ethics approval. In the report you should describe the objective of the engagement activity, describe the methods used, results, interpretation and conclusions. You must be concise. If additional details are generated which will be useful to future workers, these can be included in an appendix (after Appendix B).

The final sections are again ***authored by the team collectively*** and must include the following:

Summary of findings: 1 page of writing, with additional figures (i.e. you are encouraged to include figures, in particular conceptual diagrams, if these support your findings, and these don't count towards the page limit). In this section, the conclusions from the individual components are brought together, showing how these are related to one another and how they support, or contradict one another. The overall findings are summarized, concisely. Do not repeat the results from earlier sections, but emphasize take home messages and conclusions. The primary audience for this section is your faculty advisor and the academic community.

Towards a solution: 1 page of writing, with additional figures or tables. In this section, you have the opportunity to either present a prototype solution to the partner organization, or provide a number of future recommendations for further research towards a solution. For the prototype solution, you might provide a detailed method or policy, which could be expressed as a conceptual diagram, a flow chart, a table, or as a single page of text. For the further research, you should outline the outstanding problems that need to be overcome or understood to solve this problem, and you should try to make concrete recommendations for what the partner organization should do next to move towards a solution. The primary audience for this section is your external advisor and partner organization.

Acknowledgements: short section thanking individuals and sources of funding, if applicable.

References: Use APA style for references and consider using a reference manager, such as Zotero.

Appendices will be included in a separate PDF document, and will be archived, but will not be shared publicly on the website. The appendices include the following sections:

Appendix A: Project plan *(drafted in the first 2 weeks of the project)*

Appendix B: Bi-weekly advisor reports *(drafted throughout the project – important these are actually done)*

Capstone event

In the 1-day capstone event, MWS student present their work to each other, faculty, partner organizations and the SENS and GIWS student body. Note particularly that incoming MWS students for the next year will all be invited to attend this event. In the morning, student teams deliver a 30 minute presentation on their project. In the afternoon, breakout sessions will be conducted, where teams will be given a group of students/faculty/external partners to work with, and they will conduct a social engagement activity around their "Towards a solution" contribution from their report. A single page pamphlet will be produced and printed and shared with participants. The teams may either use this time to try to market their solution to the group, and seek the endorsement of the group, or they may present a range of options or dilemma's to the group and seek input from the group on optimal solutions.

Detailed assessment of students

The ENVS 992 project is worth 6 credit units. The short courses in project management make up 20% of the grade in this class, with the remaining 80% for student performance and deliverables in the team project.

Project management short courses (20%)

The project management short courses will be assessed by a single take home exam, to be completed after the courses have been completed. The exam will test students' understanding of the concepts covered by all instructors and guest lecturers, and will largely comprise short written answers. 48 hours will be allowed to complete the exam. The exam is work 20% of the grade for ENVS992. High marks will be given for clear answers that demonstrate understanding of the concepts, correct answers to questions, good English and evidence of critical thinking. Poor marks will be given for unclear explanations, contradictions, standard textbook answers that do not demonstrate individual understanding, incorrect answers to questions, and poor English. Plagiarism will not be tolerated and will result in a mark of zero.

Team project report (50%)

The team project report must conform to the style and content guidelines provided above to be acceptable. A report that does conform to these standards will be marked as follows:

Component	Mark	Details
Executive summary	10/50 Team	This is a crucial piece of writing. High marks will be given if the executive summary can be easily read and understood and successfully conveys the problem, method, findings and recommendations. Poor marks will be given for poor English, poor structure, unclear or missing statements of the problem, method, findings and recommendations. 3 marks will be deducted if the summary exceeds 1 page.
Introduction, site description, Summary of finings and Towards a solution	20/50 Team	High marks are awarded for a well-researched literature review, and demonstrated evidence of reading around the organizations problem. The site description should be comprehensive and clear, if included. The summary of findings should draw on all aspects of the project work and should draw viable conclusions. The solution should address the organizations priorities and concerns directly. Poor marks will be given for failing to do any of the above, and for a poorly structured document, and for poor English. Up to 10 marks will be deducted if the document quality is poor (e.g. inconsistent fonts, spacing, unreadable figures or tables, and so on).
Individual sections (see table above)	20/50 Individual	This section will be marked for each student individually. The write up must be well structured with good English. The methods used must be appropriate and clearly described. The results must be clearly presented with appropriate and clear figures with labelled axes, readable labels, and so on. The conclusions should be concise and clear. Marks will be allocated based on the quality of the above; additionally, poor marks will be awarded for poor document structure, poor presentation quality, poor English and unconvincing conclusions.

Team project capstone event (20%)

The capstone event includes a team presentation, worth 20% for the team, and a social engagement activity, worth 10% for the team. These will be assess by the external advisor, the faculty advisor and the program director. Good marks will be awarded for high quality presentation materials, clear communication, engagement of all team members, and for actively and effectively engaging the audience. Poor marks will be awarded for unclear presentations, with poor graphics, unorganized structure and unclear take home messages, and for failing to engage the audience in the activity.

Professional performance (10%)

This discretionary mark will be awarded to individuals by the MWS program director and faculty advisor, and reflects how effectively and enthusiastically the student engaged with the project. High marks will be given for good organizational skills, good time management, good attendance in team meetings, positive approaches to problem solving in the team and with the partners, proactive engagement in the project (e.g. actively contributing to discussions, having ideas and sharing them), and completing the planning documents (Appendix A and B). Poor marks will be given for missing meetings, missing deadlines and not planning effectively in response to this, failing to engage with team-mates and partners, and failing to complete the planning documents.

School and University policy statements

1. Grading System Description

SENS uses the following grading system as adopted by the College of Graduate Studies and Research:

90-100 Exceptional

A superior performance with consistent strong evidence of

- a comprehensive, incisive grasp of subject matter;
- an ability to make insightful, critical evaluation of information;
- an exceptional capacity for original, creative and/or logical thinking;
- an exceptional ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently;
- an exceptional ability to analyze and solve difficult problems related to subject matter.

80-89 Very Good to Excellent

A very good to excellent performance with strong evidence of

- a comprehensive grasp of subject matter;
- an ability to make sound critical evaluation of information;
- a very good to excellent capacity for original, creative and/or logical thinking;
- a very good to excellent ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently;
- a very good to excellent ability to analyze and solve difficult problems related to subject matter.

70-79 Satisfactory to Good

A satisfactory to good performance with evidence of

- a substantial knowledge of subject matter;
- a satisfactory to good understanding of the relevant issues and satisfactory to good familiarity with the relevant literature and technology;
- a satisfactory to good capacity for logical thinking;
- some capacity for original and creative thinking;
- a satisfactory to good ability to organize, to analyze, and to examine the subject matter in a critical and constructive manner;
- a satisfactory to good ability to analyze and solve moderately difficult problems.

60-69 Poor

A generally weak performance, but with some evidence of

- a basic grasp of the subject matter;
- some understanding of the basic issues;
- some familiarity with the relevant literature and techniques;
- some ability to develop solutions to moderately difficult problems related to the subject matter;
- some ability to examine the material in a critical and analytical manner.

<60 Failure

An unacceptable performance.

2. Midterm and Final Examination Scheduling

Midterm and final examinations must be written on the date scheduled.
Final examinations may be scheduled at any time during the examination period; students should therefore avoid making prior travel, employment, or other commitments for this period. If a student is unable to write an exam through no fault of his or her own for medical or other valid reasons, documentation must be provided and an opportunity to write the missed exam may be given. Students are encouraged to review all examination policies and procedures:
http://students.usask.ca/academics/exams.php

3. Assessment Issues and Grade Disputes

A student shall be permitted to see any examination unless otherwise stated at the beginning of the course. Students dissatisfied with the assessment of their work in any aspect of course work, including midterm or final examination should consult the University policy '*Student Appeals or Evaluation, Grading and Academic Standing'* found at the Office of the University Secretary:
http://policies.usask.ca/policies/student-affairs-and-activities/student-appeals.php

4. Examinations with Disability Services for Students (DSS)

Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with Disability Services for Students (DSS) if they have not already done so. Students who suspect they may have disabilities should contact DSS for advice and referrals. In order to access DSS programs and supports, students must follow DSS policy and procedures. For more information, check http://www.students.usask.ca/disability/ , or contact DSS at 966-7273 or dss@usask.ca.

Students registered with DSS may request alternative arrangements for mid-term and final examinations. Students must arrange such accommodations through DSS by the stated deadlines. Instructors shall provide the examinations for students who are being accommodated by the deadlines established by DSS.

5. Academic Honesty

The University of Saskatchewan is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Student Conduct & Appeals section of the University Secretary Website and avoid any behavior that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

All students should read and be familiar with the Regulations on Academic Student Misconduct as well as the Standard of Student Conduct in Non-Academic Matters and Procedures for Resolution of Complaints and Appeals (http://www.usask.ca/secretariat/student-conduct-appeals/)

For more information on what academic integrity means for students see the Academic Integrity Awareness site at: http://www.usask.ca/integrity/index.php

6. Recording

The syllabus must include a notice of whether the instructor intends to record lectures and whether students are permitted to record lectures.

University of Saskatchewan
School of Environment and Sustainability

Academic Integrity Checklist

Honesty and integrity are expected of every student at the University of Saskatchewan. There are many forms of academic misconduct; perhaps the most common is plagiarism. According to the University of Saskatchewan Guidelines for Academic Conduct:

"Plagiarism is the theft of the intellectual creation of another person without proper attribution. It is the use of someone else's words or ideas or data without proper documentation or acknowledgment. Quotations must be clearly marked, and sources of information, ideas, or opinions of others must be clearly indicated in all written work. This applies to paraphrased ideas as well as to direct quotations. A student must acknowledge and fairly recognize any contributions made to their personal research and scholarly work by others, including other students."

There are many resources on campus to assist you with proper citation and paraphrasing.

- For guidance on when and how to quote from other documents and how to properly paraphrase information in other documents, see http://library.usask.ca/howto/honesty.php.
- To learn about different styles of citation and how to properly cite a variety of different sources including statistics, archival materials, maps, legal documents and government reports, see http://libguides.usask.ca/citation.

When in doubt about a citation requirement or your approach to paraphrasing, ask your librarian or your course instructor or your academic supervisor for assistance.

Before you submit any written work, review it against the following checklist:[1]

- ❒ I have acknowledged the use of all ideas with accurate citations.
- ❒ I have used the words of another author, instructor, information source, etc., and I have properly acknowledged this and used proper citation.
- ❒ In paraphrasing the work of others, I have put the idea into my own words and did not just change some words or rearrange the sentence structure.
- ❒ I have checked my work against my notes to be sure that I have correctly referenced all quotes or ideas.
- ❒ When using direct quotations I have used quotation marks (or other means to clearly identify the quoted text) and provided full citations.
- ❒ Apart from material that is a direct quotation, everything else in the work is presented in my own words.
- ❒ When paraphrasing the work of others I have acknowledged the source or the central idea.
- ❒ I have checked all citations for accuracy (e.g. page numbers, journal volume, dates, web page addresses).
- ❒ I have used a recognized reference style (i.e. APA, MLA, Chicago etc.) consistently throughout my work.
- ❒ My list of references/ bibliography includes all of the sources used to complete the work.
- ❒ I have accurately and completely described any data or evidence I have collected or used.
- ❒ I fully understand all of the content (e.g., terms, concepts, theories, data, equations, ideas) of the work that I am submitting.
- ❒ The content of the work has not been shared with another student, unless permitted by the instructor.
- ❒ The content of the work reflects wholly my own intellectual contribution or analysis and not that of another student(s), unless the instructor approved the submission of group or collaborative work.
- ❒ If another person proofread my work it was for the sole purpose of indicating areas of concern, which I then corrected myself.
- ❒ This work has not been submitted, whole or in part, for credit in another course or at another institution, without the permission of the current course instructor(s).
- ❒ I understand the University of Saskatchewan's policy and expectations concerning academic honesty and the consequences of plagiarism or other forms of academic misconduct.

[1] Compiled based on York University (http://www.yorku.ca/tutorial/academic_integrity/acadintechecklist.html), Curtin University (http://academicintegrity.curtin.edu.au/global/checklist.cfm, University of Toronto (http://www.utoronto.ca/academicintegrity/resourcesforstudents.html), and Skidmore College (http://cms.skidmore.edu/advising/integrity/checklist.cfm) checklists for academic integrity.