

ENST 4022. Regenerative Design & Development
January – April 2021

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Office Hours: Wednesdays, 8:35 – 11:25 or by appointment

Course Timetable: Wednesdays, 8:35 am – 11:25 am
Room: On-line

Course Description

Let's face it: few discussions concerning our relationship with the environment have happy endings. We are constantly being bombarded by images of environmental disasters. And today, it is even more serious as we – perhaps – are the cusp of a pandemic era. It's not surprising that many people simply throw up their arms in despair. What can we do?

While these concerns are well-founded, and it is true that our actions are certainly triggering environmental catastrophes and potentially collapse, it is not all doom and gloom. The Earth is resilient; it can mend itself if given the chance. Furthermore, people are adaptable; we can change our ways and, with our creativity, help the Earth mend itself.

This is the backdrop for this course. *Sustainability, itself, is not good enough*; we must do more if we are to help the Earth repair itself. For the next three months we are going to look at regenerative design and development. Regenerative design and development demands that we all take an active part in this healing process, and not simply minimize the impacts of our actions.

You spent enough of your undergraduate lives learning about the doom-and-gloom side of life; it is now time to break free and seek out positive solutions. This course is meant to do just that, combining fun with learning; creativity and imagination with the years of knowledge you have acquired. Through these it is hoped that you will learn that all is not doom and gloom; that there is a pathway to a positive and thriving world for all life.

Course Text:

Hes, D. and C. du Plessis. 2015. *Designing for Hope: Pathways to Regenerative Sustainability*. New York: Earthscan (Routledge). (A copy has been placed on reserve in the library.)

Course Outline

Week	Topic
January 13	<i>Introducing the Course and Expectations.</i> Introducing Regenerative Design & Development <u>Live introductory class:</u> January 13 (Mandatory attendance)
January 20	Regeneration as the New Sustainability <u>Live introductory class:</u> January 20 <u>Due January 20:</u> Design Vision Paper Proposal
January 27	Rediscovering Nature and our Place in it <u>Live introductory class:</u> January 27
February 10	Practice of Regenerative Design & Development <u>Live introductory class:</u> February 10
February 17	<i>Reading Week</i> – No class
March 3	<i>Mid-term Exam</i>
March 10	Advance Practices of Regenerative Design & Development – I <u>Live introductory class:</u> March 10
March 24	Advance Practices of Regenerative Design & Development – II <u>Live introductory class:</u> March 24 <u>Due March 24:</u> Draft of your Paper
April 7	Harmony in Design <u>Live introductory class:</u> April 7
April 14	Final exam: The Reflective Practitioner

Learning Objectives

The goal is to encourage you to explore issues creatively and positively. The pedagogical goal is to help you develop a professional, critical analytical ‘eye’. Through the discussions, lectures, individual research and the project, it is hoped that every student will acquire the ability to approach difficult questions in an objective and critical fashion, and to learn how to think “outside the box” when seeking solutions to these questions.

Course Structure and Deliverables

This course is organised into an introductory class and six study units. I will introduce each unit in a live class. These are listed above. Each unit then consists of a series of video talks plus readings. You are required to complete reflection questions posed in each unit. These are to encourage you to reflect on the ideas and methods – and to think as a futurist.

Your final course grade will be based on three sets of deliverables: the design vision paper, two examinations, and the unit reflection exercises.

The purpose of the critical reflections is to assess your engagement with, and understanding of, the materials presented in the course. The design vision paper provides you with the opportunity to apply these materials using a real-world case study.

Unit Reflections

Every unit ends with a set of reflections questions you will be required to complete before moving on to the next unit. These are meant to get you thinking critically about the ideas, approaches and methods of RD&D. They will be based upon the video materials and readings.

Two Exams

These exams will focus on the methodologies and practices of RD&D. The mid-term will focus on the basic conceptual model of RD&D and its philosophy. The final exam will focus on the advanced practices of RD&D and the principles of the reflective practitioner as outlined in the textbook in chapters 9 and 10. These will be on-line and open resourced but based on the materials covered in this course only.

Design Vision Paper

The purpose of this paper is to provide you with the opportunity to apply the ideas, principles, methods and approaches embodied in RD&D to a real-world case study of your choosing.

This work is to have a very strict structure. You are to identify a specific case study that you will then analyse using the Seven Petals of the International Living Future Institute RD&D model. You will then develop a design vision for that case study. The case study can be a community, a building retrofitting (even your own home), a brownfield area or some other geographical definable area, a lot for a new homeless centre, a community centre, a yoga retreat, or some other community function. It can be a case study from the Third World, a favela, slum, rural village or neighbourhood. This will allow you to select a case study that you are personally interested in. As we have students from a range of degree programs, this will also allow you to select a case study from your field of study. However, it must be geographic in nature and it must combine the built and natural landscapes – to ensure you address questions associated with both architectural design and landscape design.

You will be required to submit a proposal using the template outlined in *Appendix 1* on January 13 so you can get going on it immediately. This work should reflect the ideas and approaches I cover in the lectures. The paper is also professional and academic, so it requires academic and professional literature (that is to say, peer-reviewed literature).

Deadlines are absolute. I am approaching this course as I always do for a fourth-year level seminar: as a professional firm in which I am the boss and you are my employees. I want you to learn to pay strict attention to deadlines because that is what will be expected of you in the real world. When your boss tells you to have something done by a specific day (and even time), he/she expects you to meet that deadline. That's the same in this course. Get use to this now!

Grading

The grading of these components is as follows:

<i>Mid-term Exam</i>	20%
<i>Final Exam</i>	20%
<i>Term Paper</i>	50%
<i>Unit Reflections</i>	10%
Total	100%

Grades

In accordance with the Carleton University Calendar, the letter grades assigned in this course will have the following percentage equivalents:

A+ = 90-100	A = 85-89	A - = 80-84
B+ = 77-79	B = 73-76	B - = 70-72
C+ = 67-69	C = 63-66	C - = 60-62
D+ = 56-59	D = 53-56	D - = 50-52
F = Less than 50		

WDN = Withdrawn from the course

ABS = Student absent from final exam

FND (Failed, no Deferral) = Student could not pass the course even with 100% on final exam.

Final grades are subject to the Dean's approval.

Deferred Assignments/Grades

Only official deferrals petitioned through the Office of the Registrar will be honoured. Students who are unable to complete a final paper or write a final examination because of illness or other circumstances beyond their control or whose performance on an examination has been impaired by such circumstances may apply within five working days to the Registrarial Services Office for permission to extend a term paper deadline or to write a deferred examination. Permission can be granted only if the request is fully and specifically supported by a medical certificate or other relevant documents.

Submission of Written Assignments and Late Penalties

All assignments must be submitted through the course cuLearn site in Word format. If you use a Mac, please test your converted submission before submitting. If I cannot open your file, it will be considered late. (If you are uncertain and wish to cover your mark, send me a pdf version as well to my e-mail address.)

Assignments are due at the *beginning* of class on the indicated due dates. Assignments handed in during or after class will be considered late. Late assignments will be subject to a reduction of the overall assignment mark at the rate of 2% for each calendar day past the due date unless accompanied by *adequate* written documentation for a *legitimate* reason. Assignment extensions will be considered *only* for *documented* illnesses or *immediate* family emergencies. Late penalties will be enforced to ensure fairness in grading among students. Assignments will *not* be accepted more than five days past the due date and the uploading function on cuLearn will be programmed accordingly.

Written assignments must represent individual work completed on an independent basis. They must be typed using 11 or 12-point font, contain appropriate academic referencing and adhere to the instructions for written assignments distributed in class and posted on cuLearn. Students are asked to retain a hard copy (with electronic backup) of submitted assignments in the event of loss. Plagiarism will be monitored and treated as an instructional offence in accordance with university policy (see below). Requests for a review of an assigned grade must take place in written form (e.g. by e-mail) *within 7 days* of the grade being posted on cuLearn.

Written Assignments

If you feel you need assistance in improving your writing skills, you are encouraged to get in touch early in the term with the Writing Tutorial Service (located in Room 229, Patterson Hall, <http://www.carleton.ca/wts/>). I strongly encourage you to take advantage of this service as effective writing is an invaluable in the workplace.

Some Common and not-so-Common Courtesies

1. ***Communications:*** Students should use their Carleton email account for all course-related correspondence, placing “ENST/GEOG 4022” in the subject heading. Please note that I may not respond to emails over the weekend. Email is an acceptable medium for responding to simple inquiries, but not complex questions (e.g. “I was ill for class. What did I miss?”).
2. ***Preparation:*** Knowledge of the content of the syllabus and the cuLearn course site is the responsibility of each student. I expect everyone to have read the required readings before the course so we can engage in real discussion.
3. ***Be on time:*** Students entering even a virtual room during the course of the class can be highly disruptive. Err on the side of caution. Prepare your morning beverage and sign in early.

Requests for Academic Accommodations

You may need special arrangements to meet your academic obligations during the term. For an accommodation request, the processes are as follows:

Pregnancy obligation

Write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details see the Student Guide.

Religious obligation

Write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details see the Student Guide.

Academic Accommodations for Students with Disabilities

The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation.

If you are already registered with the PMC, contact your PMC coordinator to send me your Letter of Accommodation at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website for the deadline to request accommodations for the exam.

Academic Standing and Conduct

Students must familiarize themselves with the regulations concerning academic standing and conduct in the 2019-2020 Carleton University Undergraduate Calendar.

Drop/Withdrawal Date

Please refer to the 2019-2020 Undergraduate Calendar for the final day that one is permitted to withdraw from a fall term course.

Retain Copies of Work Submitted

Students are strongly advised to retain a hard copy (and electronic backup) of all assignments and term papers in the event of loss for whatever reason.

Student Life Services

Student Life Services, located in Room 501 of the Unicentre, offers a wide range of programs and services to assist students in adjusting to academic life, in improving their learning skills, and in making academic and career decisions

University Regulations Regarding Cheating and Plagiarism

University regulations stipulate that any allegation of plagiarism, cheating or violations of examination conduct rules will be thoroughly reviewed. Each case must be reported to the Dean, who investigates each allegation. If there is no resolution following this investigation at the Dean's level, a tribunal will be appointed by the Senate to review the case and make a final decision.

[A Note on Plagiarism:](#) Webster's Dictionary defines plagiarism as stealing. Plagiarism is the submission of someone else's writing/ideas/work as your own. All ideas presented which are not your own must be properly referenced. While forms of plagiarism may vary, each involves verbatim or near verbatim presentation of the writings or ideas of others' as one's own without adequately acknowledging the original source. Plagiarism includes (but is not limited to) copying from a book, article or another student, downloading material or ideas from the Internet, or otherwise submitting someone else's work or ideas as your own.

ENST/GEOG 4022 Research Design Paper Proposal
[title of your proposed case study]

Submitted by
[your name, student number]

[date submitted]

Project Title

This title should clearly state the name and purpose of the design project (e.g., “A Regenerative Design of ...” Or “The Creation of a Therapeutic Retreat on the [site]” Or “A Regenerative Neighbourhood Design for [site]”)

Rationale

Here you are expected to explain why you propose to examine this specific site. For example, if you are thinking of doing your own home, it could be because of the need to re-conceive how we approach suburban design. If you are proposing to look at an Indian slum, it may be because of the growing concentration of humanity in such settings globally whether these are slums, shanty towns or favellas. In other words, set your proposed study in a broader context.

Background

Here you are expected to provide a description of the specific project and its site you wish to examine – its location, size and nature. If, for example you are going to examine the regenerative design of a brownfield, clearly identify that site, its size and what it presently consists of. Make sure to include a site map along with photos (this is important). This does not have to go into too much detail; that is for the next step of the work. However, you should highlight the issues you will have to address (e.g., issues associated with the site include population concentration in a slum, availability of safe water, greenspace, energy usage, noise, privacy).

Supporting Literature

You are required to present 10 references – a minimum of 5 current and on-topic academic articles (no older than five years old, on the project area type [e.g., if you are looking at a specific slum, you could draw upon research on other slums] and not articles on regenerative design). The remaining 5 can be quality non-academic (government reports, NGOs reports, journalist feature exposes) documents but not blogs or two-page files you find on the internet. In other words, these references have to have substance to them.

Approach

You are then required to provide an outline describing how you plan to approach the design project. For example, you might want to take a capability approach or rights approach to the design issue. Or, you may want to zero in on the major issue facing the population or site users. For example, if you are thinking of creating a health retreat on a brownfield site, you may want to approach from the idea of creating a healthy environment (what is required for a yoga site)?

ENST/GEOG 4022 Research Design Paper Proposal
Can Off-grid Design Provide a Foundation for Regenerative Architecture?

Submitted by
[your name, student number]

[date]

Project Title

Reconceiving an Old Farmhouse into a Regenerative Off-grid Home: Can Off-grid Design Provide a Foundation for Regenerative Architecture?

Rationale

There is a growing desire on the part of both individuals and jurisdictions to build houses that have smaller environmental footprints. In some jurisdictions this desire has already been incorporated into building codes, such as in California where solar panels are now mandatory on all new construction. In other jurisdictions, the focus has been on drafting certification programs for varying Green buildings and then leaving it to the construction industry to adapt. There exists, globally, a range of certification programs for Green buildings in general, and Green homes specifically including Earth Advantage, The Living Building Challenge, Passive House Certification, Zero Energy Ready Certification, Net Zero Energy Home Program, Net Zero Carbon Home Program, Green Built Homes, and LEED Zero in North America.

Proponents of Regenerative Design and Development (RD&D) argue that sustainability, as a framework for action, is inadequate. The fundamental principle of RD&D is that people should be positive contributors to the surrounding natural environment and beyond through net positive design. As such, the base objective of RD&D is to contribute more to the surrounding natural environment than is removed through our actions. As such, Green architecture should not be limited to ideas of net zero energy or net zero water usage, or to carbon neutrality. Green architecture should embrace a more holistic ideal fostering regenerative designs that focus on creating thriving environment connecting human spaces to natural spaces as well as emphasising well-being, beauty and aesthetics instead of square footage, economics-based design and assembly-line construction of “little pink houses for you and me.”

This research paper seeks to focus on the off-grid design approach, from its place in the counterculture to mainstream design theory. The off-grid home, as understood today, gained in popularity during the 1960s and 1970s as part of the “Back to the Land” counterculture. Despite technological advances, both in terms of building materials and technological systems, off-grid houses have never seemed to be accepted by mainstream society, instead remaining in this alternative lifestyle. However, with the significant advances in various technologies, notably in energy generation and water conservation, is there a case to be made for off-grid approaches today?

Background

This design paper will use my home as a case study. My house is located in Oxford Mills, southwest of Kemptville. It was the original farmhouse, built at the turn of the last century. It is a two-storey wood house on a one-acre lot surrounded by farmland and woodlots. Its front faces south, offering

a wealth of sunlight throughout the day. Currently I maintain an extensive vegetable garden and have planted a modest apple orchard on the property. I have plans to build a greenhouse addition to the front of the house as well.

Supporting Literature

Most of the literature on off-grid design focuses on specific aspects of the design, primarily energy system design and water management systems. However, there is literature dealing with the broader philosophical and design approaches that can serve as the basis for this study..

Schlacht, I.L., Foing, B., Naulais, B., Toeters, M., Blok, F., Nebergall, K., Salotti, J., Mangeot, A., Bannova, O., Ono, A., Olmedo Soler, A., van Woud, H., & Masali, M. (2014). *Practical Design Examples for Human Habitats in Space, Off-grid, and in Low-impact Communities*. (IAC-14.E5.2.3) 65th International Astronautical Congress, Toronto, Canada. – Off-grid designs seek to be as self-sufficient and integrated as possible. This article addresses strategies of self-containment of integrated systems providing a self-reliant living complex that includes not simply low energy/carbon design but incorporates good production systems as well.

Kambo, Amrita, Renger, Birte Christina, Drogemuller, Robin, & Yarla-gadda, Prasad (2016) Regenerative sustainability and geodesign in Byron Shire. In Miller, W, Manley, K, & Susilawati, C (Eds.) *Healthy Housing 2016: Proceedings of the 7th International Conference on Energy and Environment of Residential Buildings*. Queensland University of Technology, Australia, pp. 213-228. – Geodesign embraces off-grid principles and has gained increasing interest in the past decade. This article connects geodesign with regenerative design.

Bowley, W., & Mukhopadhyaya, P. (2017). A sustainable design for an off-grid passive container house, *International Review of Applied Sciences and Engineering IRASE*, 8(2), 145-152. – Few articles actually focus on off-grid design theory, focusing more on a specific construction approach. This article uses container design as the approach for studying the integrated systems of an off-grid house.

Ren, Zhengen, P. Paevere & Chen, D. (2019). Feasibility of off-grid housing under current and future climates. *Applied Energy*. 241:196-211. – What makes this article of value is the examination of off-grid design and climate change.

Sell, M.C. (2019). Reaching sustainability goals through efficiency and off-grid living. *Journal of the Pennsylvania Academy of Science*. Vol. 93, No. 2 (2019), pp. 187-194.

Approach

You are then required to provide an outline describing how you plan to approach the design project. For example, you might want to take a capability approach or rights approach to the design issue. Or, you may want to zero in on one the major issue facing the population or site users. For example, if you are thinking of creating a health retreat on a brownfield site, you may want to approach from the idea of creating a healthy environment (what is required for a yoga site)?