

**Interdisciplinary Concepts on Environmental,
Economic and Social Sustainability**

Code: 43068
ECTS Credits: 15

Degree	Type	Year	Semester
4313784 Interdisciplinary Studies in Environmental, Economic and Social Sustainability	OB	0	A

Contact

Name: Laia Mojica Gasol
Email: laia.mojica@uab.cat

Teachers

Jordina Belmonte Soler
Laura Talens Peiro
Carles Barriocanal Lozano
Eduard Ariza Sole
Sergio Villamayor Tomas
Carles Gasol Martinez
Claudio Cattaneo

Use of Languages

Principal working language: english (eng)

Prerequisites

no prerequisites

Objectives and Contextualisation

This module aims to ensure the interdisciplinarity of environmental studies. Every environmental issue must be tackled considering natural as well as economic and social aspects in order to guarantee a sustainable solution for future generations.

This is why a review of the essential concepts related to the three itineraries of this Master's program is conducted. Altogether, new concepts related to ongoing research conducted at ICTA and partner Departments are introduced. Lastly, topics related to communication and academic diffusion are also to be studied.

This is a module divided between the first and second semesters. Nevertheless, as this is an introductory module, most part of the lectures is set in the first semester.

In the first semester, the essential concepts of interdisciplinary practice and the three specialities of the program, Ecological Economics, Urban and Industrial Ecology and Global Change are reviewed (a three-day field trip to Alinyà is included). Therefore, it is a module with considerable teaching participation. The classes of the second semester are dedicated to topics related to communication and scientific dissemination in relation to the Final Master's Thesis (TFM). The format of the TFM is that of a scientific article. So it prepares students, as an exercise in communication and scientific dissemination, in this task.

Competences

- Analyse how the Earth functions on a global scale in order to understand and interpret environmental changes on the global and local scales.
- Analyse, summarise, organise and plan projects related to the environmental improvement of product, processes and services.
- Apply knowledge of environmental and ecological economics to the analysis and interpretation of environmental problem areas.
- Apply knowledge of environmental engineering to purification and decontamination in different environments.
- Apply the acquired knowledge and methodologies of environmental, economic and social sustainability to the planning and control of environmental management policies and projects.
- Communicate orally and in writing in English.
- Seek out information in the scientific literature using appropriate channels, and use this information to formulate and contextualise research in environmental sciences.
- Use acquired knowledge as a basis for originality in the application of ideas, often in a research context.

Learning Outcomes

1. Apply a multi-criteria analysis to a system.
2. Communicate orally and in writing in English.
3. Compare and make an objective selection from among the different possible techniques in an industrial process, applying criteria of environmental sustainability.
4. Distinguish the Earth's subsystems and know its interactions.
5. Know the different options for waste treatment.
6. Know the economic tools that can be applied to problems of environmental policy.
7. Know the main systems for purifying water and gases.
8. Know the processes of prevention, re-use, recycling and valorisation of waste.
9. Know the two fundamental tools for evaluation problems: Cost-benefit analysis and multi-criteria analysis.
10. Seek out information in the scientific literature using appropriate channels, and use this information to formulate and contextualise research in environmental sciences.
11. Use acquired knowledge as a basis for originality in the application of ideas, often in a research context.

Content

FIRST SEMESTER

PART 1. Theory and Practice of transdisciplinarity in environmental science

Prof. Eduard Ariza

DAY 1, TUESDAY 27 OF SEPTEMBER 2022 (15-18 h)

The history and theory of interdisciplinarity in sustainability research

- Philosophical concepts and recent evolution
- The need to clarify hidden assumptions: The reflexive approach
- Sustainability science as a value laden research
- The difficult task of framing of wicked problems
- Epistemological pluralism

Mandatory reading:

Lélé, S., and R. B. Norgaard. 2005. Practicing interdisciplinarity. *Bioscience* 55 (11): 967-975

DAY 2, WEDNESDAY 28 OF SEPTEMBER 2022 (15-18 h)

Weak vs Strong transdisciplinarity

- Multi, inter and transdisciplinarity.
- Weak transdisciplinarity (Max-Neef questions)
- Strong transdisciplinarity (levels of reality, overcoming dualism and complexity)

Mandatory reading:

Max-Neef, M. A. 2005. Foundations of transdisciplinarity. *Ecological Economics* 53: 5-16.

DAY 3, THURSDAY 29 OF SEPTEMBER 2022 (15-18 h)

The practice of Interdisciplinarity: the intellectual challenge

- Conflictual framings and search for answers
- Mismatches in methods and explanatory models of the epistemic communities
- How does an interdisciplinary project work?

Mandatory reading:

Farrell, K., Luzzati, T., and S. van den Hove. 2013. What lies beyond reductionism? Taking stock of interdisciplinary research in ecological economics. In: Farrell, K., Luzzati, T. and S. van den Hove (eds). *Beyond Reductionism: A passion for interdisciplinarity*. Routledge, London.

DAY 4, FRIDAY 30 OF SEPTEMBER 2022 (15-18 h)

Whole Systems Thinking

- From Environmental and Sustainability Education to Whole Systems Thinking
- Transformative learning theory
- Transformative learning practice

Mandatory reading:

Sterling, S.R. 2010. Transformative learning and sustainability: sketching the conceptual ground. *Learning and teaching in Higher Education* 5: 17-33.

PART 2: Introduction to ecological economics: plurality of values and knowledge, institutions and research-activism

Sergio Villamayor-Tomas

This block and Prof. Claudio Cattaneo's block constitute an introduction to Ecological Economics. Prof. Cattaneo's focuses on the foundations of Ecological Economics that have to do with biophysical analysis and connections to (de)growth. This block covers the foundations that have to do with heterodox economics, pluralism, and activism.

The two blocks will be introduced in the session of the 4th of October.

4th of October: Introduction to Ecological Economics and the Barcelona School

The goal of this session is twofold: 1) introduce the basic history and tenets of Ecological Economics and the particular take of scholars working at ICTA (recently referred to as the Barcelona School of Ecological Economics and Political Ecology); and 2) to have a firsthand introduction to the history of the Barcelona School by one of its founders.

Mandatory reading:

Martinez-Alier, J., & Muradian, R. (2015). "Taking stock: the keystones of ecological economics", in J. Martinez-Alier & R. Muradian (eds.), *Handbook of ecological economics*, Edward Elgar Publishing (pp. 1-26).

5th of October: Frontiers and paradigm changes in science: the case of Ecological Economics?

The goal of this session is twofold: 1) to become familiar with the process through which scientific standards and programs evolve, using the example of ecological economics; and 2) to have a firsthand introduction to the work on climate behavioral economics carried in one of the Ecological Economics research groups at ICTA.

Mandatory readings:

Walker, T. C. (2010). The perils of paradigm mentalities: Revisiting Kuhn, Lakatos, and Popper. *Perspectives on Politics*, 433-451.

Villamayor-Tomas, S., Roy, B., Muradian, R., (2022). "The Barcelona School of ecological economics and political ecology: Building bridges between moving shores", in Villamayor-Tomas, S. and R. Muradian (eds.), *The Barcelona school of ecological economics and political ecology, Springer: A Companion in Honour of Joan Martinez-Alier*, Springer.

6th of October: Plurality of values and knowledge

The goal of this session is to have a firsthand introduction to the work on evolutionary economics and environmental psychology, and local ecological knowledge carried out by two of the Ecological Economics research groups at ICTA.

Mandatory reading:

Reyes-García, V., García-del-Amo, D., Benyei, P., Fernández-Llamazares, Á., Gravani, K., Junqueira, A. B., ... & Soleymani-Fard, R. (2019). A collaborative approach to bring insights from local observations of climate change impacts into global climate change research. *Current opinion in environmental sustainability*, 39, 1-8.

7th of October: Institutions, justice and research activism

The goal of this session is twofold: 1) to have a firsthand introduction to the work on institutional analysis and environmental justice carried out by two of the Ecological Economics research groups at ICTA; and 2) to critically evaluate the concept of transdisciplinary research and related paradigms and confront students with their epistemological and normative positions as current/future researchers/professionals of sustainable development.

Mandatory reading:

Otero, I., Niewöhner, J., Krueger, T., Dogmus, Ö. C., Himmelreich, J., Sichau, C., & Hostert, P. (2017). The position of scientists in transformations of human-environment systems. An inquiry into IRI THESys research practices.

Optional Readings:

Villamayor-Tomas, S., & García-López, G. (2018). Social movements as key actors in governing the commons: Evidence from community-based resource management cases across the world. *Global environmental change*, 53, 114-126.

PART 3:

Prof. Claudio Cattaneo

This block of 4 sessions figures out hot topics in ecological economics that can offer valuable insights to industrial ecology and global change. The general framework of the biophysical limits to growth is then explored with a specific focus on climate change, extractivism and environmental conflicts (energy and materials) and a practical application to ecological urbanism is then introduced.

October 10th: Entropy, environment, economics. The biophysical roots of the economic process, the (im)possibility of the circular economy and its implications for growth and social justice.

Mandatory reading:

Georgescu-Roegen, N., 1975. Energy and Economic Myths. Southern Economic Journal, 41(3).
<http://www.uvm.edu/~jfarley/EEseminar/readings/energy%20myths.pdf>

October 11th: Introduction to degrowth.

Mandatory reading:

Kallis, G., et al., 2018. Research on Degrowth, Annual Review of Environment and Resources, 43, 4.1-4.26

October 17th: Climate Scenarios, commodity Frontiers, environmental conflicts and degrowth.

Mandatory reading:

Koch, 2015: Climate Change, Capitalism and Degrowth Trajectories to a Global Steady-State Economy. International Critical Thought <http://dx.doi.org/10.1080/21598282.2015.1102078>

Anderson and Peters, 2016. The trouble with negative emissions Science 354 (6309), 182-183. [doi: 10.1126/science.aah4567]

Conde, M. and Walter, M. (2015) Commodity Frontiers (Ch 13) Degrowth. A Vocabulary for a New Era. Additional readings:

Patel, R., & Moore, J. W. (2017). Introduction. A History of the World in Seven Cheap Things: A Guide to Capitalism, Nature, and the Future of the Planet. Univ of California Press.

Conde, M. (2017). Resistance to mining. A review. Ecological Economics, 132, 80-90.

Alimonda H., (2015) Mining in Latin America: Coloniality and Degradation, 149-162 In International handbook PE (Bryant (Ed.).

October 20th: From ecological economics to industrial (urban) ecology: Barcelona Doughnut Economics

Mandatory reading:

reading: [the City Portrait methodology](#)

Additional Reading: Rueda, S. et al., El Urbanismo Ecológico. Agencia de Ecología Urbana de Barcelona. ([link to theory](#))

PART 4: Training stay in a natural space (Oct 13, Oct 14 and Oct 15)

Teaching staff: Jordina Belmonte & Carles Barriocanal (jordina.belmonte@uab.cat; carlosalfredo.barriocanal@uab.cat)

The activities that we propose will take place in one of the natural spaces that the Fundació Catalunya-La Pedrera (FC-LP) owns and devotes to teaching and research activities. For more information visit: <https://fundaciocatalunya-lapedrera.com/en/nature-spaces/monnatura-pirineus>

UAB and FC-LP signed a contract in 2012 to facilitate the development of activities to UAB members, especially in Alinyà but not exclusively. This campus will offer us the opportunity to learn natural sciences and socio-ecological aspects and to assist to explanations on projects that are being run in the area, at the time that all students participating get to know better each other and begin to collaborate and work together.

A detailed agenda on the travel to the space (that will be done by bus and organized by ICTA-UAB) and the activities will be provided at the beginning of the Master. The students will be asked to contribute to the expenses of the travel and stay. The amount required will be established later and will not exceed 100 €/person (for the 2,5 days that the training will last).

Aula activities, talks and debates related with the Knowledge and the sustainable use of the local environment. Main speakers: Jordina Belmonte (ICTA-UAB researcher & Dept. Animal Biology, Plant Biology and Ecology), Carles Barriocanal (Dept. Geography), personnel from the FC-LP to be determined and all master students in the debate.

a) Introduction to the space visited: climatology, geomorphology, biodiversity, biogeography.

b) Livestock and the management of pastures and forests

c) Research projects

d) Sustainable use of the local environment and practical interpretation of the landscape from a socioecological perspective.

Field activities: Adapted to the natural space visited.

PART 5: Tools and methods of industrial ecology (Oct 3rd, Oct 21, Nov 11 and Nov 25)

Prof. Laura Talens/ Carles Martínez Gasol

Block 1. Introduction to the circular economy, and the main tools of Industrial Ecology.

Introduction to Circular Economy:

- Introduction to the different schools of thought, with special emphasis on industrial ecology.
- Description of the various action plans in the Circular Economy in the EU.
- Linking the plans in Circular Economy with other EU strategies such as ecodesign regulations and critical materials.
- Understand the EU Ecodesign implementation process.
- Case study.

Introduction to Ecodesign

- Introduction to ecodesign
- Ecological design strategies
- Review of current ecodesign legislation.

Development of life cycle analysis (LCA)

- Introduction to LCA as a tool for evaluating products, services and projects.
- Environmental tools and environmental certification systems for products and organisations

Introduction to the carbon footprint applied to waste management.

- Introduction of the carbon footprint concept

Use of the CO2ZW tool.

Methodology

Block 1 (2ECT). Introduction to circular economy, and the main tools of industrial ecology

- 12 hours of class that include theory and practical exercises.

- 6 hours of Circular Economy, Ecodesign and theory applied to case studies
- 6 hours of stroke theory and theory applied to case studies
- 25 hours of readings (documents and case studies) and studies outside the classroom (individual and in groups)

Classroom hours: Theory classes will provide students with the necessary knowledge to understand the application of LCA and Ecodesign tools in the analysis and design of electrical and electronic equipment (EEE), as well as conceptualize a project proposal in circular economy.

Work outside the classroom consist on two exercises a paper review focused on a case study on LCA and one project.

The project of designing a project in circular economy will be carried out outside the classroom to ensure that the students have understood the theoretical classes and to learn to put the concepts into practice.

Group projects: The conceptualization and design of a project proposal based on circular economy issues such as:

- Circular supply: use of recycled and reusable materials, instead of new materials.
- Recovery of resources through innovative processes that allow a positive impact on the value chain.
- Extend product life through recovery, resale, or eco-friendly innovation and design.
- Products as services: offering payment services for a product while maintaining its ownership for the subsequent recovery of resources.
- Innovation in processes through closed-loop production, to maximize the use of resources and minimize environmental impact.

The project proposal will be presented as follows:

- A short video describing your project (max. 7 min). The video should highlight the main objective, the potential benefits in environmental, social and economic terms and the tentative methodological approach to evaluate it.
- A brief report with the following content:
 - Section 1, general approach to the project:
 - o Description of the objective of the circular economy project.
 - o Methodological approach
 - o Possible benefits of the project.
 - Section 2, evaluation of the potential impact project:
 - o Provisional environmental assessment of the project using tools that focus on a systematic and life cycle approach.
 - o Definition of the Functional Unit
 - o System and product description
 - o Discussion on the expected results of the evaluation using the selected environmental tool

The project proposals will be evaluated based on the following aspects:

- Speech and communication: clarity of the objective, the methodology and the results, and the correct use of vocabulary and terminology
- Time: adjusted use of time to important aspects
- Format and data: easy to understand and follow the discourse (good listening and reading of the information presented)

- Project: real applicability and replicability of the proposal, originality, and innovative nature of the idea. potential benefits on environmental, social and economic aspects.
- Existence of clear and measurable objectives and indicators of tracing.

PART 6: Communication and academic dissemination, also related to the master's thesis (Feb 1, Feb 8, Feb 14, Feb 21 and Feb 28)

Prof. Laia Mojica laia.mojica@uab.cat

Course and objectives

The goal of the course is to introduce students to the fundamentals of writing and presentations in the context of academic work. The main objective of the course is to help students to dominate the specific requirements of writing academic articles, reports and theses, and presentations at the graduate level. With this objective, we will specifically work on the design of the research, the critical summary, the synthesis, and the presentations.

Topics covered in class include discussion of academic writing, article structure, abstracts, introductions/conclusions, literature reviews, evidences, referencing styles, sources and citations, plagiarism, scholarly sources, and library resources. We will also address strategies for presenting information. The course offers opportunities for discussions and exercises.

Contents

Sessions include:

1) Readings: we will read academic articles selected by the teacher and the students. The readings will be discussed in class.

2) Short Writing: Throughout the classes, students will complete various short writing exercises in class. These will be exercises in the use of concepts learned in class/reading and will be incorporated into assignments.

3) Papers: students will write two individual essays:

(a) The first essay is a bibliographic review: students choose an academic book from their fields of study and write a summary-review.

(b) The second essay is a synthesis essay: students write an introduction on a topic they have worked on in their field of study.

4) Oral presentation: students will present their bibliographic review under the instructions of the instructor and will receive comments from the class.

Methodology

1. Lectures, problem solving and case studies

2. Learning based on real cases

3. Presentation and oral presentation of the research work developed

4. Participation in complementary activities

Methodology

1. Lectures, problem solving and case studies

2. Case-based learning

3. Presentation and oral exposition of developed research

4. Participation in complementary activities

5. Field trips

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Complementary activities	26	1.04	11
Field trips	80	3.2	3, 2, 8, 4, 11
Final work	65	2.6	10, 2, 6, 11
Lessons	84	3.36	3, 2, 6, 11
Type: Supervised			
Reading papers	40	1.6	10, 11
Reading teaching materials	45	1.8	

Assessment

PART 1: EDUARD ARIZA

Test (40%), essay (50%) and class participation (10%).

PART 2 AND 3: SERGIO VILLAMAYOR/CLAUDIO CATTANELO

For this block: online and in-class quizzes based on readings and or in-class activities (50%); essay based on readings and in-class content (50%)

PART 4: JORDINA BELMONTE/CARLES BARRIOCANAL

Students will follow an evaluation consisting in answering the questions and field exercises that the teachers will provide dealing on the teachings received during the training; they can include personal opinions on how to run the management of an environment. Students will have an accorded period of time for preparing and submitting the answers. They will be evaluated from 0 to 10 and the final mark will be the mean of the two (or more) exercises proposed.

PART 5: LAURA TALENS/ CARLES M. GASOL

To pass the module, the student must have at least a grade of 4.0 in each block, the combined grade must be greater than 5. If the student fails in one module, he will have to re-register for the entire module.

Block 1: the evaluation will be of 30% of the initial tests done in class, 20% of the exercise of review of a publication of LCA as homework, 40% on the project as homework and 10% based on the participation and class attendance.

The degree of participation consists of:

1. Quizzes (Individual). Each class will begin with a 10-15-minute test based on the previous class and assigned readings. In addition to ensuring a continuous effort on the part of the students, this will also motivate them to arrive on time to class and be prepared to think. In "participation" both tests and small presentations have the same weight.

2. Homework (Individual). There will be 1 activity during the course based on a critical review of a LCA scientific publication.

3. Project (group). Students will make 1 video presentation of their project during the course. They will also submit a report on the conceptualization, design and method of assessing the potential environmental impact of the project. The final project and its presentation will be announced during the classes.

PART 6: LAIA MOJICA

Participation in the discussions of the readings: 20%

Class exercises: 20%

Assignment: 40%

Oral presentation: 20%

Note: it is necessary to present the works and make the oral presentation to pass part 6 of the subject.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Assistance activities and complementary field work	10	20	0.8	10, 3, 2, 7, 8, 5, 9, 6, 11
Attendance and active participation in class	10	5	0.2	1, 2, 8, 5, 9, 6, 4, 11
Defense course assignments	20	10	0.4	2, 11

Bibliography

PART 1: EDUARD ARIZA

Farrell, K., Luzzati, T., and S. van den Hove. 2013. What lies beyond reductionism? Taking stock of interdisciplinary research in ecological economics. In: Farrell, K., Luzzati, T. and S. van den Hove (eds). Beyond Reductionism: A passion for interdisciplinarity. Routledge, London.

Lélé, S., and R. B. Norgaard. 2005. Practicing interdisciplinarity. *Bioscience* 55 (11): 967-975

Max-Neef, M. A. 2005. Foundations of transdisciplinarity. *Ecological Economics* 53: 5-16.

Sterling, S.R. 2010. Transformative learning and sustainability: sketching the conceptual ground. *Learning and teaching in Higher Education* 5: 17-33

PART 2: SERGIO VILLAMAYOR

Readings in the content section.

PART 3: CLAUDIO CATTANEO

Readings in the content section.

PART 4: JORDINA BELMONTE/CARLES BARRIOCANAL

Germain, J. Ed. 2010. Els sistemes naturals de les Planes de Son i la mata de València. Treballs de la Institució Catalana d'Història Natural núm. 16.

<https://blogs.iec.cat/ichn/publicacions/els-sistemes-naturals-de-les-planes-de-son-i-la-mata-de-valencia/>

PART 5: MARTÍNEZ GASOL/LAURA TALENS

Guinée, Jeroen (Ed.). 2002. Handbook on Life Cycle Assessment. Operational Guide to the ISO Standards. Springer. ISBN 978-0-306-48055-3.

·Methodology of supporting decision-making of waste management with material flow analysis (MFA) and consequential life cycle assessment (CLCA): case study of waste paper recycling. Eva Seigné-Itoiz, Carles M. Gasol, Joan Rieradevall, Xavier Gabarrell. Journal of Cleaner Production, Volume 105, 15 October 2015, Pages 253-262

Life Cycle Assessment of apple and peach production, distribution and consumption in Mediterranean fruit sector. Elisabet Vinyes, Luis Asin, Simó Alegre, Pere Muñoz, Carles M. Gasol Journal of Cleaner Production, Volume 149, 15 April 2017, Pages 313-320

Life cycle assessment of energy flow and packaging use in food purchasing, Esther Sanyé, Jordi Oliver-Solà, Carles M. Gasol, Ramon Farreny, Xavier Gabarrell Journal of Cleaner Production, Volume 25, April 2012, Pages 51-59

Introduction to the Eco-Design Methodology and the Role of Product Carbon Footprint Esther Sanyé-Mengual, Raul García Lozano, Ramon Farreny, Jordi Oliver-Solà, Carles M. Gasol & Joan Rieradevall. Assessment of Carbon Footprint in Different Industrial Sectors, Volume 1 pp 1-24- Part of the EcoProduction book series (ECOPROD) Springer Science+Business Media Singapore 2014 ·Kirchherr, J. Et al 2017. Conceptualizing the circular economy: An analysis of 114 definitions. Resources, Conservation and Recycling. 2017. <https://doi.org/10.1016/j.resconrec.2017.09.005>

EU Action Plan for Circular Economy:

http://ec.europa.eu/environment/circular-economy/implementation_report.pdf

Ellen MacArthur definition of Circular Economy:

<https://www.ellenmacarthurfoundation.org/circular-economy/overview/concept>

Chancerel, P., Rotter, S., 2009. Recycling-oriented characterization of small waste electrical and electronic equipment. Waste Manag. 29, 2336-2352. <https://doi.org/10.1016/j.wasman.2009.04.003>

Ecodesign directive: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32009L0125>

Gabarell i Durany X, Sanjuan Delmás D, Martínez Gasol C, Feced Mateu M, Talens Peiró L and J Rieradevall. 'Implementation of the Ecodesign Directive via working plans, based on the analysis of the selected product groups'. ISBN 978-92-846-2225-2. European Union, 2017. Available at:

[http://www.europarl.europa.eu/RegData/etudes/STUD/2017/611015/EPRS_STU\(2017\)611015_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2017/611015/EPRS_STU(2017)611015_EN.pdf)

Ueberschaar, M., Otto, S.J., Rotter, V.S., 2017. Challenges for critical raw material recovery from WEEE -The case study of gallium. Waste Manag. 60, 534-545. <https://doi.org/10.1016/j.wasman.2016.12.035>

Talens Peiró L., Castro Girón A., Gabarrell i Durany X. Examining the feasibility of the urban mining of hard disk drives. Journal of Cleaner Production. 2019. <https://doi.org/10.1016/j.jclepro.2019.119216>.

Talens Peiró L., Polverini D., Ardente F., Mathieux F. 2019. Advances towards circular economy policies in the EU: The new Ecodesign regulation of enterprise servers. Resources, Conservation and Recycling. <https://doi.org/10.1016/j.resconrec.2019.104426>.

Blengini G.A.; et al. 2017. EU Methodology for Critical Raw Materials Assessment: Policy Needs and Proposed Solutions for Incremental Improvements. *Resources Policy*. 53, pp.12-12

PART 6: LAIA MOJICA

Aarabi, Parham (2008). *The art of lecturing: a practical guide to successful university lectures and business presentations*. Cambridge, UK: Cambridge University Press.

Eco, Umberto (2001). *Cómo se hace una tesis: técnicas y procedimientos de estudio, investigación y escritura*. Barcelona: Gedisa

Evans, David, Gruba, Paul & Zobel, Justin (2014) *How to write a better thesis*. Third Edition. Cham: Springer.

Feak Christine & Swales John (2009). *Telling a Research Story: Writing a Literature Review*. Ann Arbor, MI: University of Michigan Press.

Glasman-Deal, Hilary (2009). *Science research writing for non-native speakers of English*. London, Hackensack, NJ : Imperial College Press

Holliday, Adrian (2007). *Doing and Writing Qualitative Research*. London: Sage.

Locke, Laurence, Spirduso, Warren Wyrick, & Silverman, Stephan. J. (2014) *Proposals that work: a guide for planning dissertations and grant proposals*. Sixth edition. Thousand Oaks, California: Sage.

Meloy, Judith M. (2002). *Writing the qualitative dissertation: understanding by doing*. 2nd ed. Mahwah, N.J.: Lawrence Erlbaum Associates.

Silva, Paul J. (2007) *How to Write a Lot: A Practical Guide to Productive Academic Writing*. Washington, DC: American Psychological Association.

Swales John & Feak Christine (2012). *Academic Writing for Graduate Students: Essential Tasks and Skill*. 3rd edition. University of Michigan Press.

Waller, Vivianne, Farquharson, Karen, & Dempsey Deborah Eds (2016). *Qualitative social research: contemporary methods for the digital age*. Los Angeles, Calif: Sage.

Warren, Carol & Karner, Tracy (2015). *Discovering qualitative methods: ethnography, interviews, documents, and images*. New York: Oxford University Press.

Yin, Robert R (1994). *Case Study Research. Design and methods*. London: Sage Publications.

Software

...