



## ES/SO360 DESIGNING THE SUSTAINABLE CITY – GLOBAL PILLARS COURSE

IES Abroad Multi-Location

### DESCRIPTION:

IES Abroad's Global Pillars – Sustainable Living, Equitable Living, Human Wellbeing – integrate the UN Sustainable Development Goals (SDG's), universally adopted goals governing the delivery of public goods. The Global Pillars courses use the pillars as a reference framework, adopt a problem-based learning methodology, and build a multidisciplinary learning community. *Designing the Sustainable City* integrates all three Global Pillars.

*"All the biggest problems that we face now (...) like global climate change or the pandemic, require collaborative efforts, not just the multiplication of the same sort of person a million times over."* Peter Galison<sup>1</sup>

Urban coastal regions are not only the engine of economic growth and where most of the world's population now lives, they also use 78% of the world's resources and produce more than 60% of greenhouse gas emissions. Increased coastal urbanization, in a context of climate change and migration, requires innovative urban development that takes spatial, jurisdictional and temporal scales into account. Cities are increasingly expanding on agricultural land and valuable coastal ecosystems, and have become more vulnerable to natural and man-made disasters. Experience has shown that when cities are considered as "linked social-ecological-technological systems", initiatives are more successful since they foster collaboration across temporal, social and ecological scales as well as intersectoral and integrated spatial management.

This course aims at fostering a cross-institutional and multidisciplinary place-based learning community. Altogether, they will be part of a greater learning community, guided by faculty from diverse backgrounds.

Substantive place-based research and connections with local stakeholders, such as grassroots initiatives, start-ups or public institutions, will allow students to gather valuable data and information as they develop their projects.

For the first time, since the beginning of the Global Pillars project, Barcelona and Nice students will be able to meet and jointly work on their proposals in Camargue, France, a wetlands of international importance. They will therefore be able to share their experience and findings across the two coastal regions and develop projects comparing Spain's Catalonia coastal region with France's Provence Alpes Cote d'Azur region.

The joint groups will develop a place-based research proposal, grounded in the UNSDGs principles and deliver a multimedia recorded presentation to the group. Upon successful completion of this course, students will earn a micro-credential in Sustainability and project development that will demonstrate their sustainability literacy and ability to find innovative solutions to complex problems.

**CREDITS:** 3 credits

**CONTACT HOURS:** 45 hours

**LANGUAGE OF INSTRUCTION:** English

**INSTRUCTOR:** Alejandra Calleros (Faculty & Course integrator – Barcelona), Christine Alfsen (Faculty – Nice).

**PREREQUISITES:** None

**ADDITIONAL COST:** None

### METHOD OF PRESENTATION:

The main outcome of this course is the challenge given to joint Barcelona Nice groups to design a project proposal aimed at tackling the sustainability challenges in the two coastal regions. The methods of presentation are designed to support the students in this challenge. The following approaches will be used:

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<sup>1</sup> Peter Galison, founder of The Black Hole Initiative at Harvard University, in "Stranger than anything dreamed up by sci-fi: will we ever understand black holes?" The Guardian, 26 May, 2021

- Classes: will be held synchronously both online and F2f, across the participating centers with video links, and on-site in each location.
- Lectures: the faculty will present key concepts such as Integrated Coastal Zone Management (ICZM) and urban water management challenges in a context of climate change from different disciplinary perspectives to explore the interconnectivity between them. These lectures will be available on the Moodle site.
- Group presentations: student groups will give short presentations to the other groups on their work on the assignments. Students will be expected to give feedback to the other groups.
- Assignments and mid-term evaluation: students will work in a total of 6 assignments. These assignments are designed to build upon each other as milestones. For the mid-term evaluation, students will present the draft of their project proposal.
- Project proposal: groups will develop a Joint project proposal designed to address the challenges of coastal management in the two mediterranean regions in order to improve social, environmental and economic sustainability and resilience in their host regions. The process will be iterative, meaning they will get crossed feedback from the first draft and build upon that for 2-3 rounds, each one focusing on strengthening the project. Students will have to develop relevant, feasible, context-specific and innovative solutions.
- Online activities: groups will outline their work in the Miro board and other online environments, where they will be asked to comment and give feedback on the other groups'.
- Class discussion: the course will follow a flipped classroom approach, in which teaching will occur outside class time, and classes will be devoted to discussions and presentations.
- Materials in Moodle: key readings, videos and online resources designed to develop a general understanding of the subject matter and trigger discussion.
- Course-related trips: student participation in the course-related trips is mandatory. Students will use these trips to inspire their project proposals and give them a chance to receive feedback from experts in the field. Groups will document the trips so they can share their insights and learnings with the other groups. Some longer course-related trips can be held on Fridays and specific dates will be given at the beginning of the course.

#### REQUIRED WORK AND FORM OF ASSESSMENT:

- Participation – 20%
- Assignments – 80%
  - Project proposal development – 40%
    - Where have you landed? Introducing the host cities to the class - 10%
    - Mapping: how resilient and sustainable are our host cities and what will my role be in the project? - 10%
    - SWOT analysis - assessing sustainability with an integrated scope (economic, social, environmental and institutional) - 10%
    - Poster presentation: highlights of the challenge and its context – 10%
  - Project proposal development – 40%
    - Midterm: Project draft video presentation - 10%
    - Place-based research activities and photo board – 10%
    - Crossed feedback and project enhancement - 10%
    - Final video presentation - 10%

#### Course Element

- **Participation:** Participation is essential in this course. Students are required to study assigned materials and to participate actively both in their group activities and in their discussions with other groups. A general participation rubric will be shared with students at the beginning of the course.

- **Group Assignments:** Assignments will work as progress milestones guided by the faculty. Students will work as a group to complete the project related assignments and activities during the semester. Each student should equally contribute to the groups' project and this will be reflected in the individual grades. The starting point will be a comparative analysis of the sustainability and resilience of the host cities. The second step will consist of identifying a key sustainability challenge in their host city, and designing a project to tackle those challenges. At the end of the course, each group will deliver a multimedia recorded presentation on their final project proposal. Each group will receive feedback from their peers and from the instructors. Rubrics will be provided to guide the students in completing their assignments, leaving also space for originality and creativity. Grades will be awarded on the basis of individual and group contributions, the clarity and creativity of solutions tailored to the local context, but also on the groups' ability to work together, and to exchange ideas.
- **Summaries of place-based research activities:** Summaries and photos of course-related trips and guest speakers will be shared with other groups in class and on the Miro board. These activities are mandatory for the course.

#### LEARNING OUTCOMES:

By the end of the course, students will be able to:

- Recognize and explain the complexity and linkages of sustainability challenges at different scales and contexts
- Learn to analyze these challenges in an integrated way incorporating the ecological, social and economic dimensions
- Identify the key sustainability and social equality challenges in a determined location
- Compare and critique sustainability policies in different locations
- Learn from the problem-solving experiences of people working in other locations
- Use of different tools and methods in project planning and design
- Differentiate what makes sustainability solutions feasible or not
- Present and communicate ideas to a broader audience within the IES Community and beyond
- Work collaboratively with international teams
- Analyze the successes and failures of sustainability initiatives in other locations

#### ATTENDANCE POLICY:

As a member of our class community, you are expected to be present and on time every day. Attending both online and regular classes, has an impact on your learning and academic success. For this reason, attendance is required for all IES Barcelona and Nice classes, including course-related trips. If a student misses more than three classes in any course without justification, 3 percentage points will be deducted from the final grade for every additional absence. Seven unjustified absences in any course will result in a failing grade. Absences will only be justified, and assessed work, including exams, tests and presentations rescheduled, in cases of documented medical or family emergencies.

#### CONTENT:

| Week | Content                                                                                                                                                                           | Assignments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Week | <p><b>Introduction to the course</b></p> <p>Get familiar with course structure, learning tools and dynamics</p> <p>Learn the basics of sustainability and the SDG's framework</p> | <p>Watch: <a href="#">Urban Geography: Why We Live Where We Do</a></p> <p>Watch: <a href="#">Miro 101: Collaborating on a Board</a></p> <p>Watch: <a href="#">What is ArcGIS StoryMaps?</a></p> <p>Read: United Nations, Department of Economic and Social Affairs, <i>Sustainable Development Goals</i>, available: <a href="https://sdgs.un.org/goals">https://sdgs.un.org/goals</a></p> <p>Chaplin et al, 2002, <i>Principles of Terrestrial Ecosystem Ecology</i>, 'The ecosystem concept', pp 3-13, 'Human Caused Changes in Earth's Ecosystem', pp 13-17, Springer Verlag</p> |

| Week   | Content                                                                                                                                                                                                              | Assignments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Week   | <p><b>Reconnecting urban citizens to and through nature: Cities as champions of sustainability?</b></p> <p><b>Mapping sustainability and resilience in the host city: what are challenges at regional level?</b></p> | <p><b>WATCH:</b> Christine Alfsen's TEDxSciencesPo talk, "Reconnecting people to and through their natural environment": <a href="https://youtu.be/H51VsyscDARF">https://youtu.be/H51VsyscDARF</a>.</p> <p><b>LISTEN:</b> <a href="#">SDG 11 - Sustainable Cities and Communities. UN Sustainable Development Goals</a>: <a href="https://youtu.be/BKizTCNgq5Q">https://youtu.be/BKizTCNgq5Q</a></p> <p><b>READ:</b></p> <p>Krueger, E.H., Constantino, S.M., Centeno, M.A. et al. Governing sustainable transformations of urban social-ecological-technological systems. npj Urban Sustain 2, 10 (2022). <a href="https://doi.org/10.1038/s42949-022-00053-1">https://doi.org/10.1038/s42949-022-00053-1</a></p> <p>Borgström, S. T., T. Elmqvist, P. Angelstam, and C. Alfsen-Norodom. 2006. Scale mismatches in management of urban landscapes. Ecology and Society 11(2): 16. [online]URL:<a href="http://www.ecologyandsociety.org/vol11/iss2/art16">http://www.ecologyandsociety.org/vol11/iss2/art16</a> <a href="https://www.researchgate.net/publication/234079254_Scale_Mismatches_in_Management_of_Urban">https://www.researchgate.net/publication/234079254_Scale_Mismatches_in_Management_of_Urban</a></p> <p>Ernstson, H., van der Leeuw, S.E., Redman, C.L. et al. Urban Transitions: On Urban Resilience and Human-Dominated Ecosystems. AMBIO 39, 531–545 (2010). <a href="https://doi.org/10.1007/s13280-010-0081-9">https://doi.org/10.1007/s13280-010-0081-9</a></p> |
| Week   | <p><b>What are the current answers? Nice and Barcelona's regional resilience SWOT analysis - assessing urban sustainability with an integrated scope (economic, social, environmental and institutional)</b></p>     | <p><b>Read:</b> Ellen MacArthur Foundation, 2017, Cities in the Circular Economy: An initial exploration, Available online at: <a href="https://emf.thirdlight.com/link/6geje0hxi9n1-2aoa77/@/preview/1?o">https://emf.thirdlight.com/link/6geje0hxi9n1-2aoa77/@/preview/1?o</a></p> <p><b>Watch:</b> Ellen MacArthur - Learning &amp; The Circular Economy <a href="https://www.youtube.com/watch?v=eOGY683afyo">https://www.youtube.com/watch?v=eOGY683afyo</a></p> <p>Listen: Podcast "The Circular Economy Show". Ep 44: Building thriving cities fit for the 21st century <a href="https://www.youtube.com/watch?v=sclOhiB829c">https://www.youtube.com/watch?v=sclOhiB829c</a></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Week   | <p><b>Project proposal 1: what is the challenge and our proposed solution?</b></p> <p><b>Problem tree and Reverse brainstorming</b></p>                                                                              | <p><b>Read:</b> Chelleri L. and Olazabal M. (eds.) 2012. <i>Multidisciplinary perspectives on urban resilience: a workshop report</i>, Bilbao: Basque Centre for Climate Change, Chapter 1, "Why Urban Resilience?", pp 7-19, available for download: <a href="https://www.urbanresilienceresearch.net/2016/02/04/our-first-book-on-urban-resilience-available-online/">https://www.urbanresilienceresearch.net/2016/02/04/our-first-book-on-urban-resilience-available-online/</a></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Week 5 | <p><b>Conduct research for:</b></p> <p><b>Defining the local context and how it relates to the selected challenge.</b></p> <p>Identify best practices and examples on how to address the identified challenge.</p>   | <p><b>Read:</b> James, Paul, Liam Magee, Andy Scerri, Manfred Steger, 2015, <i>Urban sustainability in theory and practice: circles of sustainability</i>, New York: Routledge, Chapters 1 and 2, pp 3-37, available at: <a href="#">(6) Urban Sustainability in Theory and Practice: Circles of Sustainability (2015)   Paul James, Andy Scerri, and Liam Magee - Academia.edu</a></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| Week    | Content                                                                                                                                             | Assignments                                                                                                                                                                                                                                                                                                           |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Week 6  | <b>Developing the project proposal I</b><br><b>Crossed feedback to identify highlights and opportunity areas</b>                                    | <b>Read:</b><br>Fedkin, Mark V., "Sustainability, Definitions", in <i>Technologies for Sustainable Systems</i> , Department of Energy and Mineral Engineering, PSU, available:<br><a href="https://www.e-education.psu.edu/eme807/node/575">https://www.e-education.psu.edu/eme807/node/575</a>                       |
| Week 7  | <b>Developing the project proposal II</b><br><b>Theory of change 1: Stakeholders Map</b><br>Identify and map the input of the involved stakeholders | <b>Read:</b><br>Rikke Friis Dam; Teo Yu Siang. <i>Stakeholder Mapping: The Complete Guide to Stakeholder Maps</i> . 2022. Available online at:<br><a href="https://www.interaction-design.org/literature/article/map-the-stakeholders">https://www.interaction-design.org/literature/article/map-the-stakeholders</a> |
| Week 8  | <b>Focus</b><br><b>Theory of change 2</b><br>Which elements of the local context that can enhance/hinder success?                                   | <b>Read:</b><br>Patricia Rogers, 2014, "Theory of Change", <i>Methodological Briefs—Impact Evaluation No. 2</i> , UNICEF Office of Research, Florence. Available online at:<br><a href="https://www.unicef.org/irc/files/brief_2_theoryofchange_eng.pdf">brief_2_theoryofchange_eng.pdf (unicef-irc.org)</a>          |
| Week 9  | Final presentations recording                                                                                                                       | Group interview                                                                                                                                                                                                                                                                                                       |
| Week 10 | <b>Final presentations and Course conclusions</b>                                                                                                   | Final presentation                                                                                                                                                                                                                                                                                                    |

#### PLACE-BASED RESEARCH ACTIVITIES:

Students will attend visits to a range of sustainability-related projects in each location, as well as visiting experts in different fields. Some of the trips will be designed before the semester starts, whereas others will be recommended by faculty in response to the development of the local group's research. At the start of the program, students will be given guided and self-guided tours of their host cities, designed to introduce them to the key sustainability issues and concerns in the local context. Some of the longer trips might be scheduled on Fridays. Students will be informed of the dates of longer trips at the beginning of the semester.

## COURSE AND CLASS STRUCTURE

The course will be 10 weeks long, each week consisting of an online session and an onsite (F2f) session. The format of the class is indicated in the class calendar and in Moodle. The course will have two three-hour slots per week, scheduled at the same time in all three participating centers. These two blocks of time will be used to cover the following:

1. Three contact hours per week, in online and/or onsite format.
2. Place-based research activities in the city (occasionally on Fridays).
3. Three hours per week for group work on assignments (cross-center and inter-center).

## REQUIRED READINGS:

- Borgström, S. T., T. Elmqvist, P. Angelstam, and C. Alfsen-Norodom. 2006. Scale mismatches in management of urban landscapes. *Ecology and Society* 11(2): 16. [online]URL:<http://www.ecologyandsociety.org/vol11/iss2/art16>  
[https://www.researchgate.net/publication/234079254\\_Scale\\_Mismatches\\_in\\_Management\\_of\\_Urban](https://www.researchgate.net/publication/234079254_Scale_Mismatches_in_Management_of_Urban)
- Chaplin et al, 2002, *Principles of Terrestrial Ecosystem Ecology*, 'The ecosystem concept', pp 3-13, 'Human Caused Changes in Earth's Ecosystem', pp 13-17, Springer Verlag
- Chelleri L. and Olazabal M. (eds.) 2012. *Multidisciplinary perspectives on urban resilience: a workshop report*, Bilbao: Basque Centre for Climate Change, Chapter 1, "Why Urban Resilience?", pp 7-19, available for download:  
<https://www.urbanresilienceresearch.net/2016/02/04/our-first-book-on-urban-resilience-available-online/>
- Diversity.social, *Social Sustainability, Everything You Need to Know*. Available: <https://diversity.social/social-sustainability/>
- Eizenberg, Efrat, and Yosef Jabareen, 2017, "Social Sustainability: A New Conceptual Framework" *Sustainability* 9, no. 1: 68. [Sustainability | Free Full-Text | Social Sustainability: A New Conceptual Framework \(mdpi.com\)](https://www.mdpi.com/2076-3433/9/1/68)
- Ellen MacArthur Foundation, 201, *Cities in the Circular Economy: An initial exploration*, Available online at: <https://emf.thirdlight.com/link/6geie0hxi9n1-2aoa77/@/preview/1?o>
- Ernstson, H., van der Leeuw, S.E., Redman, C.L. et al. Urban Transitions: On Urban Resilience and Human-Dominated Ecosystems. *AMBIO* 39, 531–545
- (2010). <https://doi.org/10.1007/s13280-010-0081-9>
- Fedkin, Mark V., "Sustainability, Definitions", in *Technologies for Sustainable Systems*, Department of Energy and Mineral Engineering, PSU, available: <https://www.e-education.psu.edu/eme807/node/575>
- James, Paul, Liam Magee, Andy Scerri, Manfred Steger, 2015, *Urban sustainability in theory and practice: circles of sustainability*, New York: Routledge, Chapters 1 and 2, pp 3-37, available:  
[https://www.academia.edu/9294719/Urban\\_Sustainability\\_in\\_Theory\\_and\\_Practice\\_Circles\\_of\\_Sustainability\\_2015](https://www.academia.edu/9294719/Urban_Sustainability_in_Theory_and_Practice_Circles_of_Sustainability_2015)
- Krueger, E.H., Constantino, S.M., Centeno, M.A. et al. Governing sustainable transformations of urban social-ecological-technological systems. *npj Urban Sustain* 2, 10 (2022). <https://doi.org/10.1038/s42949-022-00053-1>
- McKay, David J.C., 2009, *Sustainable Energy Without the Hot Air*, UIT, Cambridge, Chapter 15, "Stuff", available:  
[https://www.withouthotair.com/c15/page\\_88.shtml](https://www.withouthotair.com/c15/page_88.shtml)
- Patricia Rogers, 2014, "Theory of Change", *Methodological Briefs—Impact Evaluation No. 2*, UNICEF Office of Research, Florence. [brief\\_2\\_theoryofchange\\_eng.pdf \(unicef-irc.org\)](https://www.unicef-irc.org/publications.asp?ref=070614eng.pdf)
- Stevens, Jess, 2020, "Urban Forests: Nature as a Resource", *Biophillic Cities/Law and Policy*, Vol 3, No 2, available:  
<https://static1.squarespace.com/static/5bbd32d6e6669016a6af7e2/t/5eff40c2f00dfd0e1790aab0/1593786570683/Urban+Forest+Law+and+Policy.pdf>
- United Nations, Department of Economic and Social Affairs, *Sustainable Development Goals*, available:  
<https://sdgs.un.org/goals>
- Zivarts, Anna, "The '15-Minute-City' isn't made for disabled bodies", *Bloomberg CityLab*, April 2021, available:  
<https://www.bloomberg.com/news/articles/2021-04-22/the-people-that-the-15-minute-city-leave-behind>

## RECOMMENDED READINGS:

This is a list of readings recommended by the faculty which students can draw on during the semester to help them tackle issues or questions that arise during their research. The faculty team will also recommend additional other readings and materials throughout the semester, adapting to the direction that the teams' research is taking.

- Berners-Lee, M., 2010, *How Bad are Bananas, The Carbon Footprint of Everything*, Green Profile, pp7-14, 28-29, 32-33, 145-148
- Brown, L. R. (2009) "Designing Cities for People", In *Plan B 4.0: Mobilizing to Save Civilization*, Norton, W. W. & Company, Inc. (Ch. 6, p.143-167). a: [http://www.earthpolicy.org/images/uploads/book\\_files/pb4ch06.pdf](http://www.earthpolicy.org/images/uploads/book_files/pb4ch06.pdf)
- Brown, L. R. (2009), "Can We Mobilize Fast Enough?" In *Plan B 4.0: Mobilizing to Save Civilization*, Norton, W. W. & Company, Inc. (Ch. 10, p.143-167). available: [http://www.earthpolicy.org/images/uploads/book\\_files/pb4ch10.pdf](http://www.earthpolicy.org/images/uploads/book_files/pb4ch10.pdf)
- Eurostat, *Sustainable Development in the European union: Overview of Progress towards the SDGs in an EU context*, available: <https://ec.europa.eu/eurostat/documents/4031688/11010788/KS-01-20-192-EN-N.pdf/ae63aff0-a6f3-1d47-da83-c6886b9daaab?t=1592486268000>
- United Nations, Department of Economic and Social Affairs, *Sustainable Development Goals*, available: <https://sdgs.un.org/goals>
- Bowerman, T., 2014, "How much is too much? A public opinion research perspective" *Sustainability: Science, Practice, & Policy*. Volume 10, Issue 1, p.1-15. Available online at: [http://sspp.proquest.com/static\\_content/vol10iss1/1209-044.bowerman.pdf](http://sspp.proquest.com/static_content/vol10iss1/1209-044.bowerman.pdf)
- Deutscher Forstwirtschaftsrat e.V., from Grober, Ulrich, 2012, *Sustainability – a cultural history* Green Books,, available: <https://www.forstwirtschaft-in-deutschland.de/index.php?id=50&L=1>, see the following tabs: "German forestry" and the 2 short chapters "Sustainability" and "Boundaries of Sustainability"
- DMA Europa, *WEG helps to generate hydro-electricity for Windsor Castle*, available: <https://www.youtube.com/watch?v=wG-TBJC1R4c>
- Ellen MacArthur Foundation, 2012, *Towards the Circular Economy Vol. 1: "An economic and business rationale for an accelerated transition"*, Available online at: <https://www.ellenmacarthurfoundation.org/assets/downloads/publications/Ellen-MacArthur-Foundation-Towards-the-Circular-Economy-vol.1.pdf>
- Fournier, V, 2008, "Escaping from the economy: the politics of degrowth", *International Journal of Sociology and Social Policy*, Vol. 28 No. 11/12, (pp. 528-545). Available online at: [http://www.web.ca/~bthomson/degrowth/fournier\\_the\\_politics\\_of\\_degrowth\\_13mar08.pdf](http://www.web.ca/~bthomson/degrowth/fournier_the_politics_of_degrowth_13mar08.pdf)
- Freiburg Town Hall, *Environmental and Climate Protection in Freiburg*, Chapter 1.4, pages 27-33, available: [https://greencity.freiburg.de/pb/site/freiburg\\_greencity/get/params\\_E1778569723/1693283/environmental%20and%20climate%20protection%20in%20Freiburg.pdf](https://greencity.freiburg.de/pb/site/freiburg_greencity/get/params_E1778569723/1693283/environmental%20and%20climate%20protection%20in%20Freiburg.pdf)
- International Institute for Sustainable Development, *Sustainable Development*, available: <https://www.iisd.org/about-iisd/sustainable-development>
- Green City Times, *Green City: Europe's solar city, Freiburg*, 4 pages, available: <https://www.greencitytimes.com/freiburg/>
- Hoornweg, Daniel; Bhada-Tata, Perinaz, 2012. "What a Waste : A Global Review of Solid Waste Management" *Urban development series;knowledge papers no. 15*. World Bank, Washington, DC. © World Bank. <https://openknowledge.worldbank.org/handle/10986/17388>
- Smil, Vaclav, 2017, *Energy and Civilization*, Cambridge: MIT Press, ch 6, "Fossil-fuelled Civilization", pp 295-381
- Spanner Re2 GmbH, *Wood gasifier at Scotston Farm – Biomass Power Plant*, available: <https://www.youtube.com/watch?v=i9xmWJ4hAGs>
- The B1M Limited, *3 Cool Ways to Cool Our Cities*, available: <https://www.youtube.com/watch?v=V4Y7VYVVD68> (8min.)
- Umwelt Bundesamt, 2019, *Rebound effects*, available: <https://www.umweltbundesamt.de/en/topics/waste-resources/economic-legal-dimensions-of-resource-conservation/rebound-effects>
- US department of agriculture: *Sustainability*, pp 1-3 (Introduction plus 'Planning Rule Requirements'), page 9 (chapter 'Describe the ecological context'), available: [https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb5130669.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5130669.pdf)
- Wirth, H., *Recent facts about photovoltaics in Germany*, Fraunhofer Institute ISE, ch. 2 and 3 (pp 5-6), ch. 13 and 14 (pp 38-43)

- WWAP (United Nations World Water Assessment Programme)/UN-Water. 2018. *The United Nations World Water Development Report 2018: Nature-Based Solutions for Water*. (P. 21-36 and 79-87) Paris, UNESCO. Available online at: <http://www.unwater.org/publications/world-water-development-report-2018/>



## **INSTRUCTORS BIOGRAPHY:**

### **Alejandra Calleros-Islas**

Alejandra Calleros-Islas graduated as an Economist. She has a Master's degree in Sustainability with a specialty in policy design and evaluation from the Universitat Politècnica de Catalunya (UPC) in Barcelona. She wrote her PhD on integrated assessment tools at the UPC, where she developed and tested a methodology to evaluate performance of agroecosystems to support the transition towards organic farming in Mexico. She is an expert in the field of sustainability with over 12 years of experience in research and project development and evaluation, both in European and Latin American contexts. She has been teaching the Sustainability: Challenges and Responses course at IES Barcelona since 2018 and the Global Pillars course Designing the Sustainable City since the Spring 2022 pilot. Her interests include the Circular Economy, the Nexus -food, energy, water- approach, biomimicry and socio-agroecosystems. What she likes the most about her professional field is its flexible, transversal and multidisciplinary nature so everyone has a part to play.

IES course taught: ES352 *Sustainability: Challenges and Responses*

### **Nora Ragab (Berlin)**

Dr. Nora Jasmin Ragab is a migration researcher, focusing on diaspora mobilization, conflicts, as well as socio-political dynamics of forced displacement, including refugee's and migrant's civic and political participation in the destination country. Nora holds a master's degree in Public Policy and Human Development, with a specialization in Migration Studies, from the Maastricht Graduate School of Governance/UNU-MERIT. Prior to that she received a B.Sc. in Business, Economics and Social Sciences from the Vienna University of Economics and Business in Austria.

IES course taught: IR319 *Europe and the Middle East*

### **Christine Alfsen (Nice)**

Christine Alfsen received a master's degree in political science, public law and public economics from the Institut d'Etudes Politiques de Paris; a graduate degree in development economics from the Université Grenoble Alpes; and a degree in Russian and Romanian languages and civilizations from the Institut des Langues et Civilisations Orientales. She worked for the United Nations for 32 years, with her last assignment being Senior Advisor on the Global Sustainability Panel in the Office of the UN Secretary General. She was the Director of the UNESCO (United Nations Educational Scientific and Cultural Organization) Office in New York and also directed a joint program between UNESCO, Columbia University and Stockholm University on biodiversity and society. The focus of her work in the last ten years has been on governance of urban areas and ecosystems functions in human dominated landscapes (urban nature, urban ecosystems, the urban biosphere).

IES Abroad courses taught: ES320 *Dangerous Liaisons: Cities and Water in the Mediterranean*; ES310 *Global Risks, Regional Vulnerabilities and Sustainable Development Pathways in the Mediterranean Region*

### **Jodi Allemeier (Cape Town)**

Jodi Allemeier is an urban development strategist and municipal governance expert who works with policy makers, planners and developers to improve their strategies, programs and projects for more integrated and resilient outcomes. Jodi holds a BA in Social Work, an Honour's in Public Administration and a Master's in Development Finance. She has 16 years' experience working with the public, private and non-profit sectors on a range of urban development issues, including property development projects, sector planning, area planning and management, and the implementation of organizational systems and change targeting improved sustainable developmental capabilities. She has worked as a facilitator and trainer on an ad hoc basis, and incorporated training and capabilities processes into her work, including leadership training, systems change training, and guest lecturing on urban systems.

IES experience: Guest lecturer for IES Abroad Cape Town