

Name of the class: City system and urban metabolism  
Class code: 76966  
Type of class: Mandatory  
Credits: 6  
Last day of curricular review: September 2020  
Pre-requisite: None

**A) NAME OF THE CLASS: CITY SYSTEM AND URBAN METABOLISM**

| Analytic Program                                |  |                                     |                                   |               |
|---|--|-------------------------------------|-----------------------------------|---------------|
| City System and Urban Metabolism                |  |                                     |                                   |               |
| General Information                             |  |                                     |                                   |               |
| Type of curriculum proposal:                    | New Creation   | <input checked="" type="checkbox"/> | Restructuration                   | Adjustment    |
| Type of class:                                  | Required   | <input checked="" type="checkbox"/> | Optative                          | Complementary |
| Class shared with another EP or academic entity | ( <input checked="" type="checkbox"/> ) No                 |                                     |                                   |               |
|   | (    ) Yes   |                                     |                                   |               |
|   | ¿With which PE is shared? _____                            |                                     |                                   |               |
|   | ¿Which semester? _____                                     |                                     |                                   |               |
| Produced by:                                    | Dr. Marcos Algara-Siller, Dra. Lourdes Marcela López-Mares |                                     |                                   |               |
| Reviewed by:                                    | Dr. Miguel Casillas-Baez, MSc Anahí Cisneros-Vidales       |                                     |                                   |               |
| Semester  | Hours of theory per week                                   | Hours of practice per week          | Hours of additional work per week | Credits       |
|   | 3  | 1                                   | 1                                 | 6             |

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| <b>General objective</b>   | Provide students with tools to understand the key concepts of urban resource governance, conceptualize urban areas as a socio-ecological and complex system, analyze networks of key actors in specific contexts, discern different governance models considering subject flows, energy and subsystems, understand the city system as a whole and issue recommendations to strengthen these models in real cases.   |
| <b>Specific objectives</b>   | <ul style="list-style-type: none"> <li>• Understand the concepts of urban governance, models and levels of governance in different contexts.</li> <li>• Conceptualize urban areas as socio-ecological and complex systems based on systems theory.</li> <li>• Analyze the participation of different actors and institutions in decision making, roles, associations, power relations, trust and leadership related to the management of urban resources.</li> <li>• Understand different concepts of subsystems such as technical infrastructure, social systems, the natural environment or scales (homes, buildings ...) and their interrelation</li> <li>• Distinguish between different governance models and issue recommendations to strengthen these models in real cases.</li> <li>• Use systems theory for the representation, explanation and modeling of urban areas</li> </ul> |
| <b>Specific professional competence (s) for which the class contributes.</b>             | <ul style="list-style-type: none"> <li>• Capacity for analysis, synthesis and critical reasoning on issues related to the governance of urban resources.</li> <li>• Ability to understand the basic principles of systems theory.</li> <li>• Appropriate application of theoretical knowledge to the analysis of real cases.</li> <li>• Ability to discern and critically assess to make proposals for improvement to existing governance schemes.</li> <li>• Ability for collaborative work</li> <li>• Ability to understand contextuality (local culture) as a condition for system behavior and concept transfer</li> </ul>  |
| <b>Practices of the specific professional competence for which the class contributes</b> | <p>The students will:</p> <ul style="list-style-type: none"> <li>• Analyze, formulate arguments and present their ideas in oral presentations.</li> <li>• Cooperate inter / multidisciplinary based on the understanding of the common system</li> <li>• Communicate using transdisciplinary language to work on complex projects.</li> <li>• Establish synergies with people and stakeholders from various fields.</li> <li>• Communicate and share ideas effectively both in writing and orally.</li> <li>• Make a critical review of literature related to urban governance</li> <li>• Compare and contrast models of urban governance in national and international cases</li> <li>• Develop a framework that allows them to analyze different governance models</li> </ul>   |

|  | <ul style="list-style-type: none"> <li>• Implement this framework in the analysis of governance structures for resource management in specific urban contexts.</li> <li>• Establish communication with different actors involved in urban resource governance in a case study and critically analyze their positions.</li> <li>• Select the appropriate data collection methods</li> <li>• They will develop skills for decision-making related to the improvement of governance models</li> </ul>   |  |                |  |  |                                      |  |   |   |  |  |
|--|--|--|----------------|--|--|--------------------------------------|--|---|---|--|--|
| <b>Professional transversal (s) competence (s) for which the class contributes</b> | <ul style="list-style-type: none"> <li>• Reason through the establishment of coherent and systematic relationships between the information derived from the experience and the conceptual frameworks and explanatory models derived from the scientific and technological fields of the profession.</li> <li>• Assume their own responsibilities under criteria of quality and relevance to society, and actively contributing to the identification and solution of social, economic, political and environmental sustainability issues.</li> <li>• Understand the world around it and insert it into its own cultural perspective and at the same time tolerant and open to the understanding of other perspectives and cultures.</li> <li>• Communicate your ideas orally and in writing, both in Spanish and English, as well as through the most modern information technologies.</li> </ul>  |  |                |  |  |                                      |  |   |   |  |  |
| <b>Units</b>   | <table border="1"> <thead> <tr> <th><b>Units</b></th> <th><b>Content</b></th> </tr> </thead> <tbody> <tr> <td><b>1. Introduction to the governance</b></td> <td>Introduction, basics<br/>Actors<br/>The role of cities in the global crisis<br/>Urban participation in the use of land and resources.</td> </tr> <tr> <td><b>2. Elements of the governance</b></td> <td>Mapping elements of governance<br/>Nation-city<br/>Municipal capacity<br/>Private sector<br/>Civil sector and grassroots organizations<br/>Political systems and institutions</td> </tr> <tr> <td><b>3. Governance schemes for resource management in urban areas</b></td> <td>Governance schemes for resource management in urban areas<br/>Environmental awareness<br/>Urban Resource Governance<br/>Resource management models</td> </tr> <tr> <td><b>4. Challenges for public policy and research gaps</b></td> <td>Challenges for public policy<br/>Research gaps and state of affairs in urban governance</td> </tr> </tbody> </table> | <b>Units</b>   | <b>Content</b> | <b>1. Introduction to the governance</b> | Introduction, basics<br>Actors<br>The role of cities in the global crisis<br>Urban participation in the use of land and resources. | <b>2. Elements of the governance</b> | Mapping elements of governance<br>Nation-city<br>Municipal capacity<br>Private sector<br>Civil sector and grassroots organizations<br>Political systems and institutions | <b>3. Governance schemes for resource management in urban areas</b> | Governance schemes for resource management in urban areas<br>Environmental awareness<br>Urban Resource Governance<br>Resource management models | <b>4. Challenges for public policy and research gaps</b> | Challenges for public policy<br>Research gaps and state of affairs in urban governance |
|  | <b>Units</b>   | <b>Content</b>   |                |  |  |                                      |  |   |   |  |  |
|  | <b>1. Introduction to the governance</b>   | Introduction, basics<br>Actors<br>The role of cities in the global crisis<br>Urban participation in the use of land and resources.                                       |                |  |  |                                      |  |   |   |  |  |
|  | <b>2. Elements of the governance</b>   | Mapping elements of governance<br>Nation-city<br>Municipal capacity<br>Private sector<br>Civil sector and grassroots organizations<br>Political systems and institutions |                |  |  |                                      |  |   |   |  |  |
|  | <b>3. Governance schemes for resource management in urban areas</b>  | Governance schemes for resource management in urban areas<br>Environmental awareness<br>Urban Resource Governance<br>Resource management models                          |                |  |  |                                      |  |   |   |  |  |
| <b>4. Challenges for public policy and research gaps</b>                           | Challenges for public policy<br>Research gaps and state of affairs in urban governance   |  |                |  |  |                                      |  |   |   |  |  |

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| <b>Method and practice</b>  | <b>Method</b>           | The course is designed as a workshop / seminar that promotes collective reflection about the concepts derived from class readings and presentations for later application in a local case study.  |  |
|                             | <b>Practice</b>         | <p>The students will:</p> <ul style="list-style-type: none"> <li>• They will issue recommendations for the improvement of the urban governance model studied.</li> <li>• Develop a frame of reference based on reading and critical discussion of references</li> <li>• Design a project for which they will identify the relevant literature and the methods of research and interpretation of results.</li> <li>• They will select a case study that allows them to analyze the participation of stakeholders and the models of governance and management of urban resources used.</li> <li>• Work closely with associations, institutions, citizen groups or other actors working on issues related to urban resources.</li> </ul> |  |
| <b>Método de evaluación</b> | <b>Partial exam</b>     | 10%   | Theme presentation and discussion organization               |
|                             |                         | 20%   | Critical essay   |
|                             |                         | 10%   | Group project of a case study, written and oral presentation |
|                             |                         | 20%   | Project approach related to your research proposal           |
|                             |                         | 40%   | Final project: written work and presentation                 |
|                             | <b>Final exam</b>       | Sum of all previous works   |  |
|                             | <b>Other activities</b> | Field work  |  |

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| <p><b>Bibliography and digital resources</b></p> | <p><b>Bibliography</b></p> | <p>Albeverio, S., Andrey, D., Giordano, P., &amp; Vancheri, A. (2007). The Dynamics of Complex Urban Systems. In <i>The Dynamics of Complex Urban Systems</i>. <a href="https://doi.org/10.1007/978-3-7908-1937-3">https://doi.org/10.1007/978-3-7908-1937-3</a></p> <p>Avis, W. R. (2016). <i>Urban Governance (Topic Guide)</i>. Birmingham, UK: GSDRC, University of Birmingham.</p> <p>Bache, I., &amp; Flinders, M. (2004). <i>Multi-level governance</i>. Oxford University Press.</p> <p>Ballesteros, R. M., &amp; Rodríguez, F. A. (2008). Adaptive design and management of a payments for ecosystem services program in Copán Ruinas, Honduras. <i>Agricultural Research: forest systems and resources</i>, 17 (1), 79-90.</p> <p>Barkin, D. (2006). <i>Urban water management in Mexico</i>. University of Guadalajara.</p> <p>Biggs, C., Ryan, C., &amp; Wiseman, J. (2010). <i>Distributed Systems: A design model for sustainable and resilient infrastructure Business Intelligence and Policy Instruments</i>. Retrieved from <a href="http://www.ecoinnovationlab.com">www.ecoinnovationlab.com</a>.</p> <p>Biswas, A.K. (2008) <i>Integrated Water Resources Management: Is It Working ?</i>, <i>International Journal of Water Resources Development</i>, 24: 1, 5-22, DOI: 10.1080 / 07900620701871718</p> <p>Brosius, J. P., Tsing, A. L., &amp; Zerner, C. (1998). <i>Representing communities: Histories and politics of community - based natural resource management</i>.</p> <p>Canto Chac, M. (2008). Governance and citizen participation in public policies facing the development challenge. <i>Politics and culture</i>, (30), 9-37.</p> <p>Díaz Álvarez, Cristian Julián. "Urban metabolism: tool for the sustainability of</p> <p>Dobson, A. (2007). <i>Environmental citizenship: towards sustainable</i></p> |
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|  |  | <p>development. Sustainable development, 15 (5), 276-285.</p> <p>Ernstson, H., Barthel, S. E., Andersson, And Borgström, S.T .. 2010. Scale-crossing brokers and network governance of urban ecosystem services: the case of Stockholm. Ecology and Society 15 (4): 28. [online] URL: <a href="http://www.ecologyandsociety.org/vol15/iss4/art28/">http://www.ecologyandsociety.org/vol15/iss4/art28/</a></p> <p>Espanya. Ministry of Public Administrations. (2005). Governance today: 10 reference texts. INAP.</p> <p>Fiksel, J. (2003). Designing Resilient, Sustainable Systems. Environmental Science and Technology. <a href="https://doi.org/10.1021/en0344819">https://doi.org/10.1021/en0344819</a></p> <p>Herzer, H. M. (2011). Construction of risk, disaster and urban environmental management: Perspectives under debate. REDESMA virtual magazine, 5 (2), 51-60.</p> <p>Leach, M., Mearns, R., &amp; Scoones, I. (1999). Environmental entitlements: dynamics and institutions in community-based natural resource management. World development, 27 (2), 225-247.</p> <p>Mayntz, R. (2001). The State and civil society in modern governance. Reform and democracy, (21), 7-22.</p> <p>Michel, A., Ribardièrre, A. "Identifying urban resources to read socio-spatial inequalities", EchoGéo [Online], 39   2017, Online since 28 March 2017, connection on 23 February 2019. URL: <a href="http://journals.openedition.org/echogeo/14943">http://journals.openedition.org/echogeo/14943</a>; DOI: 10.4000 / echogeo.14943</p> <p>Pacheco, V.R. (2006). Global environmental citizenship: An analytical cut for the study of transnational civil society. Spiral (Guadalajara), 12 (35), 149-172. Retrieved on February 22, 2019, from <a href="http://www.scielo.org.mx/scielo.php?script=sci_arttext&amp;pid=S1665-05652006000100006&amp;lng=es&amp;tng=es">http://www.scielo.org.mx/scielo.php?script=sci_arttext&amp;pid=S1665-05652006000100006&amp;lng=es&amp;tng=es</a></p> <p>Peyman Khodabakhsh, B., Mashayekhi, S., &amp; Malekpour Asl, B. (n.d.).</p> |
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|  |  | <p>An Analytical View on Resilience Urban Planning, Focusing on Urban Transport Systems and Climate Change. An Analytical View on Resilience Urban..., 2 (3), 213–228. <a href="https://doi.org/10.30958/ajss.2-3-5">https://doi.org/10.30958/ajss.2-3-5</a></p> <p>Rhodes, R. A. (1997). Understanding governance: Policy networks, governance, reflexivity and accountability. Open university press.</p> <p>Romero-Lankao, P., Gnatz, D. M., Wilhelmi, O., &amp; Hayden, M. (2016). Urban sustainability and resilience: From theory to practice. Sustainability (Switzerland). <a href="https://doi.org/10.3390/su8121224">https://doi.org/10.3390/su8121224</a>.</p> <p>Sáinz, Á. V., Maldonado, M. A., &amp; García, R. V. (2010). Citizenship and environmental awareness in Spain (No. 67). CIS. Partially obtained from: <a href="https://books.google.es/books?hl=en&amp;lr=&amp;id=N1LYNxxfDzwC&amp;oi=fnd&amp;pg=PA7&amp;dq=conciencia+medioambiental&amp;ots=1zX1AB4ssX&amp;sig=ctNPkAoWQfw3Yf4WwiD8AWs0x">https://books.google.es/books?hl=en&amp;lr=&amp;id=N1LYNxxfDzwC&amp;oi=fnd&amp;pg=PA7&amp;dq=conciencia+medioambiental&amp;ots=1zX1AB4ssX&amp;sig=ctNPkAoWQfw3Yf4WwiD8AWs0x</a></p> <p>Schmitter, P. C. (2002). Participation in governance arrangements: is there any reason to expect it will achieve “sustainable and innovative policies in a multi-level context” ?. In Participatory governance (pp. 51-69). VS Verlag für Sozialwissenschaften, Wiesbaden.</p> <p>Shackleton, C., Willis, T., Brown, K., &amp; Polunin, N. (2010). Reflecting on the next generation of models for community-based natural resources management. Environmental Conservation, 37 (1), 1-4. doi: 10.1017 / S0376892910000366</p> <p>Williams, B. (2011). "Adaptive management of natural resources — framework and issues", Journal of Environmental Management, 92 (5): 1346-1353, ISSN 0301-4797.</p> <p>Williamson, O. E. (1996). The mechanisms of governance. Oxford University Press.</p> <p>X Sanchez, A., van der Heijden, J., &amp; Osmond, P. (2018). The city politics of an urban age: urban resilience conceptualizations and policies. Palgrave Communications. <a href="https://doi.org/10.1057/s41599-">https://doi.org/10.1057/s41599-</a></p> |
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|  |                          | 018-0074-z |
|  | <b>Digital resources</b> |            |

## B) CONTENTS AND METHODS BY UNITS AND TOPICS

|  |  |           |
|--|--|-----------|
| <b>Unit 1. Introduction to governance and urban metabolism</b>       |  | <b>7h</b> |
| <b>Topic 1.1 Concepts, context and definitions</b>                   |  | <b>2h</b> |
| <b>Subtopic</b>  | 1.1.1 Introduction, concepts, context, background and relevance  |           |
| <b>Topic 1.2 Stakeholders</b>  |  | <b>2h</b> |
| <b>Subtopic</b>  | 1.2.1 Stakeholders in governance<br>1.2.2 Government structures  |           |
| <b>Topic 1.3 The role of cities in the face of the global crisis</b> |  | <b>3h</b> |
| <b>Subtopic</b>  | 1.3.1 Urban participation in the use of land and resources.<br>1.3.2 Urban infrastructure and the supply situation.<br>1.3.3 Urban emissions |           |



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| <b>Bibliography and digital resources</b> | <b>Bibliography</b>  | <p>Avis, W. R. (2016). Urban Governance (Topic Guide). Birmingham, UK: GSDRC, University of Birmingham.</p> <p><b>1.1 Concepts, context, definition</b></p> <p>Rhodes, R. A. (1997). Understanding governance: Policy networks, governance, reflexivity and accountability. Open university press.</p> <p>Williamson, O. E. (1996). The mechanisms of governance. Oxford University Press.</p> <p>Espanya. Ministerio de Administraciones Públicas. (2005). La gobernanza hoy: 10 textos de referencia. INAP.</p> <p>Quintero-Castellanos, C. "Governance and theory of organizations". Latin American Profiles, 25 (50) 2017 pp. 39-57 doi: 10.18504 / pl2550-003-2017</p> <p><b>1.2 Actors in the governance</b></p> <p>Bache, I., &amp; Flinders, M. (2004). Multi-level governance. Oxford University Press.</p> <p>Mayntz, R. (2001). The State and civil society in modern governance. Reform and democracy, (21), 7-22.</p> |
|   | <b>Digital resources</b>   |  |
| <b>Teaching method</b>                    | Workshop / seminar that promotes collective reflection about the concepts derived from class readings and presentations.   |  |
| <b>Learning activities</b>                | <p>Analyze and formulate arguments and present them in oral presentations.</p> <p>Make a critical review of literature related to urban governance</p> <p>Develop a frame of reference based on readings</p> |  |

|   |  |            |
|---|--|------------|
| <b>Unit 2. The city as a system</b>             |  | <b>12h</b> |
| <b>Topic 2.1 Introduction to systems theory</b> |  | <b>3h</b>  |

|  |  |           |
|--|--|-----------|
| <b>Subtopic</b>                                  | 2.1.1 System definitions<br>2.1.1.1 Limit<br>2.1.1.2 Autopoiesis<br>2.1.1.3 Self-regulation<br>2.1.2 Systems theory schools<br>2.1.2.1 Systems theory<br>2.1.2.2 Kibernetics<br>2.1.2.3 Complex adaptive systems   |           |
| <b>Topic 2.2 Socio-ecological systems</b>        |  | <b>2h</b> |
| <b>Subtopic</b>                                  | 2.2.1 The adaptive cycle, resilience and panarchy<br>2.2.2 Natural systems vs. social<br>2.2.3 Concept of socio-ecological systems<br>2.2.4 the city as socio-ecological systems   |           |
| <b>Topic 2.3 Complex systems and limits</b>      |  | <b>3h</b> |
| <b>Subtopic</b>                                  | 2.3.1 Cities and urban areas based on complex systems theory<br>2.3.2 Urban resources and their infrastructure<br>2.3.3 Urban scales and their respective subsystems<br>2.3.4 Interconnections of urban subsystems   |           |
| <b>Topic 2.4 Urban sustainability</b>            |  | <b>1h</b> |
| <b>Subtopic</b>                                  | 2.4.1 International speech on urban sustainability<br>2.4.2 Efficiency and resilience of the urban system as sustainability characteristics<br>2.4.3 The panarchy as scales of urban systems<br>2.4.4 Urban planning approaches based on systemic thinking |           |
| <b>Topic 2.5 Metabolism and urban governance</b> |  | <b>3h</b> |
| <b>Subtopic</b>                                  | 2.5.1 Metabolism as a means for governance<br>2.5.2 Links<br>2.5.3 Case studies  |           |

| Bibliography and digital resources | Bibliography | 2. The city as a system  |
|------------------------------------|--------------|--|
|                                    |              | <p>Albeverio, S., Andrey, D., Giordano, P., &amp; Vancheri, A. (2007). The Dynamics of Complex Urban Systems. In The Dynamics of Complex Urban Systems. <a href="https://doi.org/10.1007/978-3-7908-1937-3">https://doi.org/10.1007/978-3-7908-1937-3</a></p> <p>Biggs, C., Ryan, C., &amp; Wiseman, J. (2010). Distributed Systems: A design model for sustainable and resilient infrastructure Business Intelligence and Policy Instruments. Retrieved from <a href="http://www.ecoinnovationlab.com">www.ecoinnovationlab.com</a>.</p> <p>Díaz Álvarez, Cristian Julián. "Urban metabolism: tool for the sustainability of cities". <i>Interdiscipline 2</i>, no. 2 (2014): p. 51–70.</p> <p>Córdoba, C. F and Villagrana-Gutiérrez, A. (2015) The modeled city as an ecosystem: principles and strategies for the sustainability of the urban metabolism systems of the city. <i>Nodo Magazine Vol. 9. No. 18: 59-66pp.</i> January June. Bogotá D.C. Colombia</p> <p>Fiksel, J. (2003). <i>Designing Resilient, Sustainable Systems.</i> Environmental Science and Technology. <a href="https://doi.org/10.1021/es0344819">https://doi.org/10.1021/es0344819</a></p> <p>Peyman Khodabakhsh, B., Mashayekhi, S., &amp; Malekpour Asl, B. (n.d.). An Analytical View on Resilience Urban Planning, Focusing on Urban Transport Systems and Climate Change. <i>An Analytical View on Resilience Urban...</i>, 2(3), 213–228. <a href="https://doi.org/10.30958/ajss.2-3-5">https://doi.org/10.30958/ajss.2-3-5</a></p> <p>Romero-Lankao, P., Gnatz, D. M., Wilhelmi, O., &amp; Hayden, M. (2016). Urban sustainability and resilience: From theory to practice. <i>Sustainability (Switzerland)</i>. <a href="https://doi.org/10.3390/su8121224">https://doi.org/10.3390/su8121224</a>.</p> <p>X Sanchez, A., van der Heijden, J., &amp; Osmond, P. (2018). <i>The city politics of an urban age: urban resilience conceptualisations and policies.</i> Palgrave</p> |

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|                            |  | Communications. <a href="https://doi.org/10.1057/s41599-018-0074-z">https://doi.org/10.1057/s41599-018-0074-z</a> |
|                            | <b>Digital resources</b>   |   |
| <b>Teaching methods</b>    | Discussion seminar in which students critically analyze governance models in case studies documented in different locations.<br>Project development workshop in which students formulate a research approach.  |   |
| <b>Learning activities</b> | Compare and contrast models of urban governance in national and international cases<br>Develop a frame of reference that allows analyzing different governance models<br>Implement this framework in the analysis of governance structures for resource management in specific urban contexts. |   |

| <b>Unit 3. Elements of urban governance and metabolism</b> |   | <b>12h</b> |
|--|---|------------|
| <b>Topic 3.1 Introduction</b>                              |   | <b>1h</b>  |
| <b>Subtopic</b>  | 3.1.1 Mapping elements of governance  |            |
| <b>Topic 3.2 Nation-city</b>                               |   | <b>2h</b>  |
| <b>Subtopic</b>  | 3.2.1 State-nation relations<br>3.2.2 Challenges and opportunities to balance state-nation relations<br>3.2.3 Case studies  |            |
| <b>Topic 3.3 Municipal capacity</b>                        |   | <b>3h</b>  |
| <b>Subtopic</b>  | 3.3.1 Planning and regulation<br>3.3.2 Urban finance<br>3.3.3 Human capacity and administrative structures<br>3.3.4 Provision of services<br>3.3.5 Case studies   |            |
| <b>Topic 3.4 Privat sector</b>                             |   | <b>1h</b>  |
| <b>Subtopic</b>  | 3.4.1 Local economy and resources<br>3.4.2 Public-private partnerships<br>3.4.3 Case studies  |            |
| <b>Topic 3.5 Civil sector and base organizations</b>       |   | <b>3h</b>  |
| <b>Subtopic</b>  | 3.5.1 Participation: power, trust, decision making and leadership<br>3.5.2 Types of participation: social, citizen, community<br>3.5.3 Participation structures<br>3.5.4 Regulatory framework for participation<br>3.5.5 Case studies |            |
| <b>Topic 3.6 Institutional and politic system</b>          |   | <b>2h</b>  |

|   |  |   |
|---|--|---|
| <b>Subtopic</b>                           | 3.6.1 Formal and informal political structures<br>3.6.2 Political economy and decision making<br>3.6.3 Case studies  |   |
| <b>Bibliography and digital resources</b> | <b>Bibliography</b>  | <p>Avis, W. R. (2016). Urban Governance (Topic Guide). Birmingham, UK: GSDRC, University of Birmingham.</p> <p><b>3.5 Civil sector and base organizations</b></p> <p>Schmitter, P. C. (2002). Participation in governance arrangements: is there any reason to expect it will achieve “sustainable and innovative policies in a multi-level context”? In Participatory governance (pp. 51-69). VS Verlag für Sozialwissenschaften, Wiesbaden.</p> <p>Canto Chac, M. (2008). Governance and citizen participation in public policies facing the development challenge. Politics and culture, (30), 9-37.</p> |
|   | <b>Digital resources</b>   |   |
| <b>Teaching methods</b>                   | <p>Discussion seminar in which students critically analyze governance models in case studies documented in different locations.</p> <p>Project development workshop in which students formulate a research approach.</p>   |   |
| <b>Learning activities</b>                | <ul style="list-style-type: none"> <li>• Compare and contrast models of urban governance in national and international cases</li> <li>• Develop a frame of reference that allows analyzing different governance models</li> <li>• Implement this framework in the analysis of governance structures for resource management in specific urban contexts.</li> </ul> |   |

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| <b>Unit 4. Esquemas de gobernanza para la gestión de recursos en áreas urbanas</b> |  | <b>9h</b> |
| <b>Topic 4.1 Introduction</b>  |  | <b>1h</b> |
| <b>Subtopic</b>  | 4.1.1 Introduction Resource management in urban areas  |           |
| <b>Topic 4.2 Environmental awareness</b>   |  | <b>2h</b> |
| <b>Subtopic</b>  | 4.2.1 Environmental citizenship<br>4.2.2 Conception and perception of the environment: environmental awareness   |           |
| <b>Topic 4.3 Urban Resource Governance</b>   |  | <b>2h</b> |
| <b>Subtopic</b>  | 4.3.1 Governance of natural resources and ecosystem services in cities<br>4.3.2 Urban artificial resources: energy, housing, infrastructure, equipment, work |           |
| <b>Topic 4.4 Resource management models</b>  |  | <b>4h</b> |
| <b>Subtopic</b>  | 4.4.1 Community management: urban commons and CBNRM  |           |

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|  | <ul style="list-style-type: none"><li>4.4.2 Adaptive management</li><li>4.4.3 Integral management</li><li>4.4.4 Case studies</li></ul> |
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| <p><b>Bibliography and digital resources</b></p> | <p><b>Bibliography</b></p> | <p><b>4.1.1 Introduction Resource management in urban areas</b></p> <p>Herzer, H. M. (2011). Construcción del riesgo, desastre y gestión ambiental urbana: Perspectivas en debate. Revista virtual REDESMA, 5(2), 51-60.</p> <p><b>4.2 Environmental awareness</b></p> <p>Sáinz, Á. V., Maldonado, M. A., &amp; García, R. V. (2010). Ciudadanía y conciencia medioambiental en España (No. 67). CIS. Parcialmente obtenido en:<br/><a href="https://books.google.es/books?hl=en&amp;lr=&amp;id=N1LYNxxfDzwC&amp;oi=fnd&amp;pg=PA7&amp;dq=conciencia+medioambiental&amp;ots=1zX1AB4ssX&amp;sig=ctNPkAoWQfw3YIf4WwiD8AWs0xQ#v=onepage&amp;q=conciencia%20medioambiental&amp;f=false">https://books.google.es/books?hl=en&amp;lr=&amp;id=N1LYNxxfDzwC&amp;oi=fnd&amp;pg=PA7&amp;dq=conciencia+medioambiental&amp;ots=1zX1AB4ssX&amp;sig=ctNPkAoWQfw3YIf4WwiD8AWs0xQ#v=onepage&amp;q=conciencia%20medioambiental&amp;f=false</a></p> <p><b>4.2.1 Environmental citizenship</b></p> <p>Pacheco, V.R. (2006). Ciudadanía ambiental global: Un recorte analítico para el estudio de la sociedad civil transnacional. Espiral (Guadalajara), 12(35), 149-172. Recuperado en 22 de febrero de 2019, de<br/><a href="http://www.scielo.org.mx/scielo.php?script=sci_arttext&amp;pid=S1665-05652006000100006&amp;lng=es&amp;tlng=es">http://www.scielo.org.mx/scielo.php?script=sci_arttext&amp;pid=S1665-05652006000100006&amp;lng=es&amp;tlng=es</a></p> <p>Dobson, A. (2007). Environmental citizenship: towards sustainable development. Sustainable development, 15(5), 276-285.</p> <p><b>4.3.1 Governance of natural resources and ecosystem services</b></p> <p>Ernstson, H., Barthel, S. E., Andersson, And Borgström, S.T.. 2010. Scale-crossing brokers and network governance of urban ecosystem services: the case of Stockholm. Ecology and Society 15(4): 28. [online] URL:<br/><a href="http://www.ecologyandsociety.org/vol15/iss4/art28/">http://www.ecologyandsociety.org/vol15/iss4/art28/</a></p> <p>Barkin, D. (2006). La gestión del agua urbana en México. Universidad de Guadalajara.</p> <p><b>4.3.2 Artificial resources: energy, housing, infrastructure, equipment, work</b></p> |
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|  |  | <p>Michel, A., Ribardièrre, A. « Identifying urban resources to read socio-spatial inequalities », <i>EchoGéo</i> [Online], 39   2017, Online since 28 March 2017, connection on 23 February 2019.<br/>URL : <a href="http://journals.openedition.org/echogeo/14943">http://journals.openedition.org/echogeo/14943</a> ; DOI : 10.4000/echogeo.14943</p> <p><b>4.4.1 CBNRM community management</b></p> <p>Leach, M., Mearns, R., &amp; Scoones, I. (1999). Environmental entitlements: dynamics and institutions in community-based natural resource management. <i>World development</i>, 27(2), 225-247.</p> <p>Brosius, J. P., Tsing, A. L., &amp; Zerner, C. (1998). Representing communities: Histories and politics of community-based natural resource management.</p> <p>Shackleton, C., Willis, T., Brown, K., &amp; Polunin, N. (2010). Reflecting on the next generation of models for community-based natural resources management. <i>Environmental Conservation</i>, 37(1), 1-4.<br/>doi:10.1017/S0376892910000366</p> <p><b>4.4.2 Adaptive management</b></p> <p>Williams, B. (2011). "Adaptive management of natural resources—framework and issues", <i>Journal of Environmental Management</i>, 92 (5): 1346-1353, ISSN 0301-4797.</p> <p><b>4.4.3 Integral management</b></p> <p>Biswas, A.K. (2008) Integrated Water Resources Management: Is It Working?, <i>International Journal of Water Resources Development</i>, 24:1, 5-22, DOI: 10.1080/07900620701871718</p> <p><b>4.4.4 Cases of study</b></p> <p>Ballesteros, R. M., &amp; Rodríguez, F. A. (2008). Diseño y gestión adaptativa de un programa de pagos por servicios</p> |
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|                            |  | ecosistémicos en Copán Ruinas, Honduras. Investigación Agraria: sistemas y recursos forestales, 17(1), 79-90. |
|                            | <b>Digital resources</b>   |   |
| <b>Teaching methods</b>    | Seminar / workshop on critical discussion of reference frames and research advances.   |   |
| <b>Learning activities</b> | <ul style="list-style-type: none"> <li>• Develop a reference framework that allows them to analyze different governance models related to urban resource management</li> <li>• Implement this framework in the analysis in the case study selected.</li> <li>• Collect data and establish communication with different actors involved in urban resource governance and critically analyze their positions.</li> </ul> |   |

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| <b>Unit 5. Challenges for governance and urban metabolism</b>           |   | <b>8h</b> |
| <b>Topic 5.1 Challenges for public policy</b>                           |   | <b>3h</b> |
| <b>Subtopic</b>   | 5.1.1 Challenges: Inclusion, informality, urban conflicts, migration and climate change |           |
| <b>Topic 5.2 Research gaps and state of affairs in urban governance</b> |   | <b>5h</b> |
| <b>Subtopic</b>   | 5.2.1 Political economy, human settlements, data and monitoring                         |           |

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| <b>Bibliography and digital resources</b> | <b>Bibliography</b>   | <p>AVIS, W. R. (2016). Urban Governance (Topic Guide). Birmingham, UK: GSDRC, University of Birmingham.</p> <p>Jacobsson, B. et al. (2015). Governing the Embedded State. The Organizational Dimension of Governance. UK: Oxford University Press.</p> <p>Ojeda, R. (2017). Urban planning and societies in transit. The city as a representation of a chronic crisis. Institutional Magazine of the Female University of the Sacred Heart, Research Center volume 22 - No. 2 July - December 2017 ISSN n.º 1680 – 3817</p> |  |
|   | <b>Digital resources</b>  |   |  |
| <b>Teaching methods</b>                   | Discussion seminar and project development workshop in which students formulate a research approach.                    |   |  |
| <b>Learning activities</b>                | Analyze the case study in light of the theory<br>Issue recommendations related to the improvement of governance models. |   |  |

### C) TEACHING AND LEARNING STRATEGIES

The course follows a conference-discussion format, complemented by a group exercise, where the lectures provide the knowledge and skills necessary for the group exercise of the students to design an urban system model. The reading and discussion are supported by the reading provided to prepare the sessions, and the participation and active participation of the students is expected during the presence phases.

The exercise is organized as a group work, where students assume roles of moderator and protocol of the sessions. The group will prepare a visual representation of an (sub) urban system with the software of their choice (for example, image software, design or Sankey diagram) and report on the discussion process, the use of literature and software and will explain the result in a brief report.

### D) EVALUATION AND ACREDITATION

| <b>Elaboration and presentation of:</b>                                      | <b>Periodicity</b>      | <b>Duration</b> | <b>Percentage of each partial in relation to the ordinary</b> |
|--|-------------------------|-----------------|---|
| <b>First partial exam:</b><br>Theme presentation and discussion organization | At the end of unit<br>1 | Units 1 and 2   | 20%   |

|   |   |        |      |
|---|---|--------|------|
| <b>Second partial exam:</b><br>Group project of a case study, written and oral presentation | At the end of unit<br>3   | Unit 3 | 20%  |
| <b>Third partial exam:</b><br>Project approach related to your research proposal            | At the end of unit<br>4   | Unit 4 | 20%  |
| <b>Third partial exam:</b><br>Final project: written work and presentation                  | At the end of unit<br>5   | Unit 5 | 40%  |
| <b>TOTAL</b>  |   |        | 100% |
| <b>Ordinary exam</b>  | The final ordinary grade will consist of the weighted sum of the partial evaluations.   |        |      |
| <b>Other academic activities required</b>   | Special non-mandatory activities will not have an additional value for each unit. These consist of attending special events on the subject or participation as organizers in events of the discipline, as well as dissemination and training activities |        |      |

## E) BIBLIOGRAPHY AND INFORMATIC RESOURCES

### Basic texts

- Albeverio, S., Andrey, D., Giordano, P., & Vancheri, A. (2007). The Dynamics of Complex Urban Systems. In *The Dynamics of Complex Urban Systems*. <https://doi.org/10.1007/978-3-7908-1937-3>
- Avis, W. R. (2016). *Urban Governance (Topic Guide)*. Birmingham, UK: GSDRC, University of Birmingham.
- Bache, I., & Flinders, M. (2004). *Multi-level governance*. Oxford University Press.
- Ballesteros, R. M., & Rodríguez, F. A. (2008). Adaptive design and management of a payments for ecosystem services program in Copán Ruinas, Honduras. *Agricultural Research: forest systems and resources*, 17 (1), 79-90.
- Barkin, D. (2006). *Urban water management in Mexico*. University of Guadalajara.
- Biggs, C., Ryan, C., & Wiseman, J. (2010). *Distributed Systems: A design model for sustainable and resilient infrastructure Business Intelligence and Policy Instruments*. Retrieved from [www.ecoinnovationlab.com](http://www.ecoinnovationlab.com).
- Biswas, A.K. (2008) *Integrated Water Resources Management: Is It Working ?*, *International Journal of Water Resources Development*, 24: 1, 5-22, DOI: 10.1080 / 07900620701871718

- Brosius, J. P., Tsing, A. L., & Zerner, C. (1998). Representing communities: Histories and politics of community - based natural resource management.
- Canto Chac, M. (2008). Governance and citizen participation in public policies facing the development challenge. *Politics and culture*, (30), 9-37.
- Díaz Álvarez, Cristian Julián. "Urban metabolism: tool for the sustainability of
- Dobson, A. (2007). Environmental citizenship: towards sustainable development. *Sustainable development*, 15 (5), 276-285.
- Ernstson, H., Barthel, S. E., Andersson, And Borgström, S.T .. 2010. Scale-crossing brokers and network governance of urban ecosystem services: the case of Stockholm. *Ecology and Society* 15 (4): 28. [online] URL: <http://www.ecologyandsociety.org/vol15/iss4/art28/>
- Espanya. Ministry of Public Administrations. (2005). Governance today: 10 reference texts. INAP.
- Fiksel, J. (2003). Designing Resilient, Sustainable Systems. *Environmental Science and Technology*. <https://doi.org/10.1021/en0344819>
- Herzer, H. M. (2011). Construction of risk, disaster and urban environmental management: Perspectives under debate. *REDESMA virtual magazine*, 5 (2), 51-60.
- Leach, M., Mearns, R., & Scoones, I. (1999). Environmental entitlements: dynamics and institutions in community-based natural resource management. *World development*, 27 (2), 225-247.
- Mayntz, R. (2001). The State and civil society in modern governance. *Reform and democracy*, (21), 7-22.
- Michel, A., Ribardièrè, A. "Identifying urban resources to read socio-spatial inequalities", *EchoGéo* [Online], 39 | 2017, Online since 28 March 2017, connection on 23 February 2019. URL: <http://journals.openedition.org/echogeo/14943>; DOI: 10.4000 / echogeo.14943
- Pacheco, V.R. (2006). Global environmental citizenship: An analytical cut for the study of transnational civil society. *Spiral (Guadalajara)*, 12 (35), 149-172. Retrieved on February 22, 2019, from [http://www.scielo.org.mx/scielo.php?script=sci\\_arttext&pid=S1665-05652006000100006&lng=es&tlng=es](http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S1665-05652006000100006&lng=es&tlng=es)
- Peyman Khodabakhsh, B., Mashayekhi, S., & Malekpour Asl, B. (n.d.). An Analytical View on Resilience Urban Planning, Focusing on Urban Transport Systems and Climate Change. *An Analytical View on Resilience Urban...*, 2 (3), 213–228. <https://doi.org/10.30958/ajss.2-3-5>

- Rhodes, R. A. (1997). *Understanding governance: Policy networks, governance, reflexivity and accountability*. Open university press.
- Romero-Lankao, P., Gnatz, D. M., Wilhelmi, O., & Hayden, M. (2016). *Urban sustainability and resilience: From theory to practice*. Sustainability (Switzerland). <https://doi.org/10.3390/su8121224>.
- Sáinz, Á. V., Maldonado, M. A., & García, R. V. (2010). *Citizenship and environmental awareness in Spain* (No. 67). CIS. Partially obtained from: <https://books.google.es/books?hl=en&lr=&id=N1LYNxXfDzwC&oi=fnd&pg=PA7&dq=conciencia+medioambiental&ots=1zX1AB4ssX&sig=ctNPkAoWQfw3YIf4WwiD8AWs0x>
- Schmitter, P. C. (2002). *Participation in governance arrangements: is there any reason to expect it will achieve "sustainable and innovative policies in a multi-level context" ?*. In *Participatory governance* (pp. 51-69). VS Verlag für Sozialwissenschaften, Wiesbaden.
- Shackleton, C., Willis, T., Brown, K., & Polunin, N. (2010). *Reflecting on the next generation of models for community-based natural resources management*. *Environmental Conservation*, 37 (1), 1-4. doi: 10.1017 / S0376892910000366
- Williams, B. (2011). "Adaptive management of natural resources — framework and issues", *Journal of Environmental Management*, 92 (5): 1346-1353, ISSN 0301-4797.
- Williamson, O. E. (1996). *The mechanisms of governance*. Oxford University Press.
- X Sanchez, A., van der Heijden, J., & Osmond, P. (2018). *The city politics of an urban age: urban resilience conceptualizations and policies*. Palgrave Communications. <https://doi.org/10.1057/s41599-018-0074-z>