



COLLEGE OF INTEGRATIVE STUDIES

AY2025-26 Term 1

Course Code: INTS202 [SMU-X]
Course Title: Creating Integrative Solutioning through Projects (CIS Projects)
Times & Venue:

Instructor(s): Maartje De Visser and Fiona Williamson
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Office: YPHSL 4.32 / 4.16
Office hours: By appointment

COURSE DESCRIPTION

This course will introduce students to the application of interdisciplinary working. Creating an interdisciplinary Major can be imagined as a puzzle whereby all the pieces are aligned around a central theme. Your module choices will form the foundational knowledge blocks for a critical question or line of enquiry which will be addressed through your final Capstone or Senior Thesis. Interdisciplinarity as a practice and method will help join all the strands together, allowing you to rise above siloed approaches to fully unpack and understand the complexity of the various dynamics at play within your chosen area of study. This course is a practical approach to interdisciplinary work through the visioning, creation, and implementation of an interdisciplinary project. The course is worth 0.5 CUs and will run every other week.

COURSE GOALS

Through in-class discussions and a practical exercise, this co-taught course will allow students to gain an immersive introduction to working within and across a range of disciplines and demonstrating how to bring these together. They will gain an understanding of the meaning of interdisciplinarity and how to harness such interdisciplinarity to tackle complex challenges. They will also be empowered to work in a collaborative way through teamwork on a class-led project.

This course serves as a mandatory introduction to the Bachelor of Integrative Studies (BIS) degree.

LEARNING OUTCOMES

Disciplinary and multidisciplinary knowledge: Students will be exposed to the different interdisciplinary theories and methods used in different disciplines to think with, and work through, complex challenges.

Intellectual and creative skills: Students will engage with classic and contemporary research methodologies and theories with a view to designing their own interdisciplinary approaches to

study and thereby formulate their own problem statements and analytical frameworks to interrogate particular themes.

Global citizenship: Students will be exposed to contemporary complex challenges that impact societies on local, regional, and global scales.

COURSE READINGS/SCHEDULE

Please note that this syllabus may change slightly over the course of the term; when in doubt, please refer to the online version of this document (the one posted on eLearn).

Week 1: Introduction to the Course and to Interdisciplinarity as a Concept

Overview:

This week will introduce the course and its Instructors, beginning with an introduction to interdisciplinarity. We will explore interdisciplinarity as an academic subject and discuss its contemporary relevance and applicability. You will be introduced to some key texts and explore these through class discussion. The second part of the class will be devoted to project ideation and assigning teams and roles in our project.

Reading:

H. J. Graff, *Un-Disciplining Knowledge: Interdisciplinarity in the 20th Century* (2015), Introduction pp. 1-19.

S Choi and K Richards, *Interdisciplinary Discourse – Communicating Across Disciplines* (Palgrave Macmillan 2017), Chapter 3, ‘Understanding Interdisciplinarity’

Week 3: Creating Effective Interdisciplinary Projects

Overview: This week we consider how to design an effective project; the role each person plays and explore the challenges and potential pitfalls of project management. In this session we will be meeting with our external partner for our project briefing.

Reading:

- Linden E. Higgins and Julia M. Smith, ‘Documenting Development of Interdisciplinary Collaboration among Researchers by Visualising Connections’, *Research Evaluation* 31:1 (2022): 159-72, Introduction pp. 159-161.
- Catherine Healy et al, ‘[All Together Now: How to Write and Interdisciplinary Research Proposal](#)’, *Times Higher Education* (2024).

Week 4: Special Tour organised by our project partner *The Urbanist*

Please note that this falls on a week not normally reserved for class, so do make sure that you are available. Tour timing will be the same day and time slot as regular class. Details will be announced over weeks 1-2

Week 5: Interdisciplinarity as a means to solving ‘wicked problems’.

Overview: This week we explore how combining multiple disciplines can help us to tackle many of the modern world’s most pressing problems. This week also serves as an introduction to ways of thinking around complexity which will be continued in more detail in week seven.

Reading:

- Christian Pohl et al., 'Addressing Wicked Problems through Transdisciplinary Research', in Robert Frodeman, ed., *The Oxford Handbook of Interdisciplinarity*, 2nd edn. (2017), Chapter 23.
- Nicholas C. Kawa et al., '[Training wicked scientists for a world of wicked problems](#)', *Nature: Humanities and Social Sciences Communications* 8:189 (2021).

Week 7: Guest Presenter: Dr Katrina Proust, Fenner School of Environment and Society, The Australian National University, Canberra

Topic: System Dynamics Thinking in Integrative Studies

Overview:

As societies become more complex, they become more difficult to manage. There is a growing need for ways to deal with social-ecological systems and the problems they generate.

History and system dynamics deal with complementary aspects of change in complex systems. History provides observations of past human behaviour and broad cause-effect perspectives. System dynamics provides a conceptual framework and practical methods for analysing observed behaviour and developing cause-effect hypotheses. An interdisciplinary approach that draws on both disciplines can support efforts to understand the antecedents and dynamics of social-ecological problems.

The session introduces guidelines developed by Barry Newell and Katrina Proust at the Australian National University. These guidelines can be used in interdisciplinary projects, as well as in policy development. They can help students using interdisciplinary methods:

1. to develop a broad historical perspective that reveals the boundaries, elements and general behaviour of a system-of-interest.
2. to identify cause-effect structures, operating within the boundaries of the system, that affect the outcomes of a project or policy.

The session will include an illustration of the approach in the context of an urban system.

Reading:

- Tony Capon, 2017, *Harnessing urbanisation for human wellbeing and planetary health*

[https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196\(17\)30005-0/fulltext](https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(17)30005-0/fulltext)
(2 pages, a good overview)

- Barry Newell and Christopher Doll, 2015, *Systems Thinking and the Cobra Effect*
<https://ourworld.unu.edu/en/systems-thinking-and-the-cobra-effect>

Week 9: Communicating Interdisciplinary Findings

Overview: This week we explore strategies to ensure meaningful communication across disciplinary boundaries for the benefit of project participants as well as external stakeholders. We will reflect on the tools available and their effectiveness. During the second half of class, students will be able to apply the insights shared for the benefit of the class project. During this session we will also have a mid-point check in with our external partner.

Reading:

- Leigh Winowiecki et al, 'Tools for enhancing interdisciplinary communication' (2011) 7 Sustainability: Science, Practice and Policy 74-80
- 'Communicating Interdisciplinary and Transdisciplinary Research Findings' in Bianca Vienni-Baptista et al (eds), *Foundations of Interdisciplinary and Transdisciplinary Research – A Reader* (Bristol University Press 2023)
- Christiane Wehle, 'How to Communicate an Interdisciplinary Project?' (Communicating European Research 2005, Springer), pp. 239-243

Optional

- Rick Szostak, 'Communicating Complex Concepts' in Michael O'Rourke et al (eds), *Enhancing Communication & Collaboration in Interdisciplinary Research* (Sage 2014), pp. 34-55

Week 11: Project unveiling

During this week, students will present the outcome of their group project to their peers, the instructors as well as external parties, leveraging the insights shared in the previous seminars on how to design and effectively convey the ideas and outcomes of an interdisciplinary project.

Week 13: Consultations (by appointment)**COURSE FORMAT**

Face to face lectures/discussions (approximately 3 hours) will take place every other week.

ASSESSMENT MODE

The grading for this course is Pass/Fail, based on the following criteria:

a. Class participation	– 20%
b. Bi-weekly reflection report	– 15%
c. Group project	– 35%
c. Final Written Report	– 30%

100%

a. Class participation (20%) – You are encouraged to actively participate in the discussions and activities that take place in class. Good class participation involves actively listening to your instructor and other students during class, joining class discussions, asking questions which are thoughtful and helpful, and being a good team member during classroom group work. Merely speaking in class will not earn you full marks for class participation. Moreover, using a smart device in class for non-class related activities is a distraction for you and everyone else; this will negatively affect your class participation.

b. Bi-weekly reflection report (15%) – After each in-person class, you are expected to contribute a reflection on how your part in the group project showcases and is informed by interdisciplinarity. This will be an evolving reflection, as your work deepens across the semester and will collectively demonstrate your understanding of the values and challenges of using interdisciplinarity as a method. Entries will be recorded on Padlet.

c. Group project (35%) – Students will work in small group on (part of) a project for our external partner. The details of this assignment, including the deliverables, will be released at the start of Term.

d. Written report (30%)

Students will write a c.750-word report. This will be in the form of a response to a statement on interdisciplinarity which will be provided during the semester. Students need to engage with the readings assigned in responding to this statement.

The report will be due on the Friday of Week 14 at 6pm.

ASSIGNMENT FORMAT AND ACADEMIC INTEGRITY

All written assignments are to be submitted in double-spaced typing along with a total word count, using any conventional style of citations, and a written anti-plagiarism declaration. There is a policy of zero tolerance for late submission (except in exceptional circumstances) and for non-submission of assignments.

All acts of academic dishonesty (including, but not limited to, plagiarism, cheating, fabrication, facilitation of acts of academic dishonesty by others, unauthorized possession of exam questions, or tampering with the academic work of other students) are serious offences.

All work (whether oral or written) submitted for purposes of assessment must be the student's own work. Penalties for violation of the policy range from zero marks for the component assessment to expulsion, depending on the nature of the offense. When in doubt, students should consult the instructors of the course. Details on the SMU Code of Academic Integrity may be accessed at <https://oasis.smu.edu.sg/Pages/DOS-WKLSWC/UCSC.aspx>.

ACCESSIBILITY AND ACCOMMODATIONS

SMU strives to make learning experiences accessible for all. If you anticipate or experience physical or academic barriers due to disability, please let your instructors know immediately. You are also welcome to contact the university's disability support team if you have questions or concerns about academic accommodations: DSS@smu.edu.sg.

Accessible tables in our seminar room are available for students who require them.

DIGITAL READINESS FOR TEACHING AND LEARNING (DRTL)

As part of emergency preparedness, Instructors may conduct lessons online via the Zoom platform during the term, to prepare students for online learning. During an actual emergency,

students will be notified to access the Zoom platform for their online lessons. The class schedule will mirror the current face-to-face class timetable unless otherwise stated.

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SUGGESTED BIBLIOGRAPHY

General

Sustainable Knowledge: A Theory of Interdisciplinarity – Robert Frodeman (2014) DOI: 10.1057/9781137303028
Learning to collaborate while collaborating: advancing interdisciplinary sustainability research – Rebecca Freeth & Guido Caniglia (2020) DOI: 10.1007/s11625-019-00701-z
Operationalization of the concepts of interdisciplinarity: An implication elicitation exercises based on the framework synthesis methodology – Shahram Yazdani & Maryam Hajiahmadi (2021) DOI: 10.4103/jehp.jehp_1522_20
Interdisciplinary Knowledge Organisation - Rick Szostak , Claudio Gnoli , María López-Huertas (2016) DOI: 10.1007/978-3-319-30148-8
Towards indicating interdisciplinarity: Characterizing interdisciplinary knowledge flow (2023) DOI: 10.1002/asi.24829
Essential tensions in interdisciplinary scholarship: navigating challenges in affect, epistemologies, and structure in environment-society research centres - V. Kelly Turner, Karina Benessaiah, Scott Warren and David Iwaniec (2015) DOI: 10.1007/s10734-015-9859-9

Sustainability

Interdisciplinary Approaches to Public Policy and Sustainability - Rituparna Das, Nivedita Mandal (2019)
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DOI: 10.4018/978-1-7998-0315-7
Integrating sustainability themes for enhancing interdisciplinarity: a case study of a comprehensive research university in Japan – Jing Liu, Yuki Watabe, Taketoshi Goto (2022) DOI: 10.1007/s12564-022-09788-z
Sustainability: An interdisciplinary field (2016) DOI: 10.21664/2238-8869.2016v5i3.p188-204
Mortality management and climate action: A review and reference for using Terror Management Theory methods in interdisciplinary environmental research - Lauren K. M. Smith, Hanna C. Ross, Stephanie A. Shouldice, Sarah Elizabeth Wolfe (2022) DOI: 10.1002/wcc.776
Climate change research and the search for solutions: rethinking interdisciplinarity - E. Lisa F. Schipper, Navroz K. Dubash & Yacob Mulugetta (2021) DOI: 10.1007/s10584-021-03237-3
Interdisciplinary Approaches to Climate Change for Sustainable Growth - Sara Valaguzza, Mark Alan Hughes (2022) DOI: 10.1007/978-3-030-87564-0#toc

Urbanisation

Urbanization: An interdisciplinary approach to a complex phenomenon (2014) DOI: 10.15270/39-1-376
Interdisciplinary and experiential learning in urban development management education - Yawei Chen, Tom A. Daamen, Erwin W. T. M. Heurkens & Wouter J. Verheul (2019) DOI: 10.1007/s10798-019-09541-5
Urbanization: An Interdisciplinary Approach to a Complex Phenomenon (2014) DOI: 10.15270/39-1-376
The Rural–Urban Interface: An Interdisciplinary Research Approach to Urbanisation Processes Around the Indian Megacity Bengaluru - Ellen Hoffmann, Stephan von Cramon-Taubadel, Andreas Buerkert, K. B. Umesh, P. S. Prasannakumar & Prem José Vazhacharickal (2021) DOI: 10.1007/978-3-030-79972-4_1
Global Health Collaboration: Challenges and Lessons – Margaret S. Winchester, Caprice A. Knapp, Rhonda BeLue (Chapter 2: Cultivating a Sustainable Interdisciplinary Discourse Around Migration, Urbanisation, and Health in Southern Africa) (2018) DOI: 10.1007/978-3-319-77685-9_2

Smart Cities

On the sustainability of smart and smarter cities in the era of big data: an interdisciplinary and transdisciplinary literature review – Simon Elias Bibri (2019) DOI: 10.1186/s40537-019-0182-7
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A collaborative, interdisciplinary initiative for a smart cities innovation network (2015) DOI: 10.1109/ISC2.2015.7366179
Assembling Sustainable Smart City Transitions: An Interdisciplinary Theoretical Perspective (2020) DOI: 10.1080/10630732.2020.1834831
Smart City Research as an Interdisciplinary Crossroads: A Challenge for Management and Organization Studies - Francesca Ricciardi & Stefano Za (2014) DOI: 10.1007/978-3-319-09450-2_14
Analyzing the Evolution of Interdisciplinary Areas: Case of Smart Cities – Won Sang Lee (2022) DOI: 10.4018/JGIM.304062
Who Uses Smart City Services and What to Make of It: Toward Interdisciplinary Smart Cities Research - Miltiadis D. Lytras & Visvizi (2018) DOI: 10.3390/su10061998

Technology and Society

Ageing and Technology - Perspectives from the Social Sciences - Emma Domínguez-Rué & Linda Nierling (2016) ISBN: 978-3-8394-2957-0
Cybersecurity, Technology, and Society: Developing an Interdisciplinary, Open, General Education Cybersecurity Course – Brian K. Payne, Wu He, Cong Wang, D. E. Wittkower, Hongyi Wu (2021) ISBN: 2574-3872
Energy Efficiency in Data Centres and the Barriers to Further Improvements: An Interdisciplinary Investigation - Gemma Brady (2016) Link
Cloud Computing: An Agent of Promoting Interdisciplinary Sciences, Especially Information Science and I-Schools – Emerging Techno-Educational Scenario - Prantosh Kr. Paul (2016) DOI: 10.4018/978-1-4666-9924-3.ch016
Data-Driven Unsustainability? An Interdisciplinary Perspective on Governing the Environmental Impacts of a Data-Driven Society – Federica Lucivero & Gabrielle Samuel (2020) Link
Algorithmic Fairness in AI (An Interdisciplinary View) - Jella Pfeiffer, Julia Gutschow, Christian Haas, Florian Möselein, Oliver Maspfuhl, Frederik Borgers & Suzana Alpsancar (2023) DOI: 10.1007/s12599-023-00787-x

Interdisciplinarity and Justice

Stuart Henry, “Interdisciplinarity in the Fields of Law, Justice, and Criminology” in Robert Frodeman (ed), The Oxford Handbook of Interdisciplinarity (2nd edn)
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Christine Bell, “Transitional Justice, Interdisciplinarity and the State of the ‘Field’ or ‘Non-Field’” (2009) 3 <i>The International Journal of Transitional Justice</i> 5-27
Harald Müller, “Justice from an Interdisciplinary Perspective: The Impact of the Revolution in Human Sciences on Peace Research and International Relations” in <i>Studies des Leibniz-Instituts Hessische Stiftung Friedens- und Konfliktforschung</i> (2019)
Brian K Payne, “Expanding the Boundaries of Criminal Justice: Emphasising the “S” in the Criminal Justice Sciences through Interdisciplinary Efforts” (2016) 33 <i>Justice Quarterly</i> 1
Klaus Scherer (ed), <i>Justice: Interdisciplinary Perspectives</i> (Cambridge University Press, 2010)

Interdisciplinarity in the Humanities

Julie Thompson Klein, <i>Interdisciplinarity: History, Theory, and Practice</i> (Wayne State University Press, 1990)
Ahmed Ibrahim Abushouk and Mahjoob Zweiri, eds, <i>Interdisciplinarity in World History: Continuity and Change</i> (Cambridge Scholars Publishing, 2006).
Lawrence Abrams and Kaleb Knoblauch, eds., <i>Historians without Borders: New Studies in Multidisciplinary History</i> (Routledge, 2019).
Cristian Tileaga and Jovan Byford, eds., <i>Psychology and History: Interdisciplinary Explorations</i> (Cambridge University Press, 2014).