Enquire Teaching Timetable

Course Outcome

GDRS 3025 - Innovating the Future: Gender, Science and Technology

Learning Outcome

By the end of the course, committed students will have attained:

- A deeper understanding of how innovations and technologies are gendered
- A sense of the distinctive and shared views in reflecting how gender shapes innovation and entrepreneurship
- Knowledge and ability to apply gender analysis to identify and describe different processes of innovation and entrepreneurship
- Reflexive Insights into the power dynamics played by individuals and institutions in the creation of novelty
- Ability to synthesize different theoretical traditions and disciplines that study gender and innovation
- Capability to evaluate technology and science-based entrepreneurial projects on their inherent gender assumptions and provide relevant suggestions

Course Syllabus

Week 1: Introduction: When are Innovation(s) Gendered?
- Innovations in science and technology often seemed gender-neutral, when do they become gendered?
- To innovate for a more sustainable future, having SDG goals in mind are important in any innovative ventures, and the course begins with the SDG goals on gender equality and reduced inequality to identify gaps in science and technology.

Week2: Doing and Undoing Gender in Innovation
- We will discuss the ways that gender analysis contributes to our understanding of innovation.
- Embedding gender analysis in science research could help filter out inherent biases to further advance the innovative processes.

Week 3: Why/How is Innovation Gendered?
- While debates about the gender dimensions of technology are many, has feminism changed science? Why and how innovation is persistently gendered?
- How do scholars explain the gender gap in innovation?

Week 4: Gender and Technology
- We will discuss different feminist approaches to study the relationship between gender and technology and the ways to reduce gender inequality in the technology field.

Week 5: Gender/Sexuality in Science and Engineering Education
- We will discuss the ways that experiences in science and technology may contribute to persistent gender inequality. What are some ways to bridge this gap?

Week 6: Gender and STEM Career
- We will discuss how different identities play a great role in STEM career that may reproduce inequality.

Week 7: Science, Technology, and Medicine
- We will discuss how people infused gendered bias on scientific discovery and how gender and sexuality shape the use of new technologies in the field of science and medicine.

Week 8: Gender in Creative Industries
- Innovation is not limited to science and technology. The emergent creative industries are also the place for innovative practices to take shape. We will discuss how gender and the creative industries are mutually shaped.

Week 9: Gender and Entrepreneurship
- Entrepreneurship is understood as the process to start and launch a business and is an important part of innovative endeavors. Scholars have explored how the entrepreneurship process is inherently gendered.

Week 10: Gender, Social Entrepreneurship, and Social Innovation
- Social entrepreneurship and social innovation are an emergent field where cross-sectoral and interdisciplinary collaborations are encouraged to come up with better solutions to complex social problems. We will discuss how gender interacts with this emergent field.

Week 11: Sustainability, Diversity, and Inclusion
- Sustainability, diversity, and inclusion are currently widely incorporated in social entrepreneurship and social innovation. We will discuss how gender analysis could contribute to these pillars.
- How do these pillars support and incubate innovation for sustainable development? (SDG Goal 9 on building resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation)

Week 12: (En)Gendering Innovation, Entrepreneurship, and Leadership I
- We will discuss how gender-sensitive leadership could help engender innovation and entrepreneurship.

Week 13: (En)Gendering Innovation, Intrapreneurship, and Leadership II
- What if the changes in gender and innovation need to happen from within an organization? We will discuss how intrapreneurship could reshape gender relations within the organization and provide the ground for gender-sensitive innovation.
- intrapreneurial leaders are key actors to advance cross-sectoral innovation and knowledge creation for a sustainable future. We will revisit the SDGs and think about how to integrate them into the science and technology fields.

	Assessment Type	Current Percent
1	Essay test or exam	25
2	Homework or assignment	30
3	Participation	15
4	Report	30

Feedback for Evaluation

1. Course and Teaching Evaluation Survey
2. Internal Course Review

Required Readings

Alsos, Gry Agnete, Ulla Hytti, and Elisabet Ljunggren. 2016. *Research Handbook on Gender and Innovation*. Edward Elgar Publishing.

Pecis, Lara. 2016. "Doing and Undoing Gender in Innovation: Femininities and Masculinities in

Innovation Processes." *Human Relations* 69(11):2117–40.

Schiebinger, Londa. 2000. "Has Feminism Changed Science?" *Signs* 25(4):1171–75.

Wajcman, J. 2010. "Feminist Theories of Technology." *Cambridge Journal of Economics* 34

(1):143–52.

Cech, Erin A. and Mary Blair-Loy. 2010. "Perceiving Glass Ceilings? Meritocratic versus

Structural Explanations of Gender Inequality among Women in Science and Technology." Social

Problems 57(3):371–97.

Kmec, Julie A. 2013. "Why Academic STEM Mothers Feel They Have to Work Harder than

Others on the Job." *International Journal of Gender, Science and Technology* 5(2):79–101.

Alfrey, Lauren, Twine, France Winddance. 2017. Gender fluid geek girls: Negotiating inequality

regimes in the tech industry. Gender & Society 31 (1): 28-50.

Ahl, Helene and Susan Marlow. 2012. "Exploring the Dynamics of Gender, Feminism and

Entrepreneurship: Advancing Debate to Escape a Dead End?" *Organization* 19(5):543–62.

Correll, Shelley J. 2017. "SWS 2016 Feminist Lecture: Reducing Gender Biases In Modern

Workplaces: A Small Wins Approach to Organizational Change." *Gender & Society* 31(6):725

–50.

吳嘉苓 et al編，2007，《科技渴望性別》。台灣科技與社會網絡計畫群，台北：群學出版

社。

Week 1: Introduction: When are Innovation(s) Gendered?
Charles, Maria. 2011. "What Gender Is Science." *Contexts* 10(2):22–28.

Herzig, Rebecca. 2010. "Does Google TM Have Gender? Technologies of Everyday Life in
Affluent Industrial Societies." *Icon* 16:92–97.

Week2: Doing and Undoing Gender in Innovation
Schiebinger, Londa and Ineke Klinge. 2013. *Gendered Innovations: How Gender Analysis

Contributes to Research.* European Commission Report.
http://www.anef.org/wp-content/uploads/2014/03/gendered_innovations_2013.pdf

Pecis, Lara. 2016. "Doing and Undoing Gender in Innovation: Femininities and Masculinities in
Innovation Processes." *Human Relations* 69(11):2117–40.

Week 3: Why/How is Innovation Gendered?
Schiebinger, Londa. 2000. "Has Feminism Changed Science?" *Signs* 25(4):1171–75.
Carrasco, Inmaculada. 2014. "Gender Gap in Innovation: An Institutionalist Explanation."
Management Decision 52(2):410–24.

[Video Homework]:
Human-centered AI: A Case for Cognitively Inspired Machine Intelligence - Fei-Fei Li
https://youtu.be/JIBvfxg2iJ0

Week 4: Gender and Technology
Wajcman, J. 2010. "Feminist Theories of Technology." *Cambridge Journal of Economics* 34
(1):143–52.

Correll, Shelley J. 2017. "SWS 2016 Feminist Lecture: Reducing Gender Biases In Modern
Workplaces: A Small Wins Approach to Organizational Change." *Gender & Society* 31(6):725–50.

成令方、吳嘉苓2005，「科技的性別政治：理論和研究的回顧與前瞻」，《科技、醫療
與社會》3：51-112。

Week 5: Gender/Sexuality in Science and Engineering Education
Cech, Erin A. and Mary Blair-Loy. 2010. "Perceiving Glass Ceilings? Meritocratic versus
Structural Explanations of Gender Inequality among Women in Science and Technology." Social
Problems 57(3):371–97.

Cech, Erin A. and Tom J. Waidzunas. 2011. "Navigating the Heteronormativity of Engineering: The Experiences of Lesbian, Gay, and Bisexual Students." *Engineering Studies* 3 (1) 1-24.

Week 6: Gender and STEM Career

Kmec, Julie A. 2013. "Why Academic STEM Mothers Feel They Have to Work Harder than Others on the Job." *International Journal of Gender, Science and Technology* 5(2):79–101.

Alfrey, Lauren, Twine, France Winddance. 2017. Gender fluid geek girls: Negotiating inequality regimes in the tech industry. Gender & Society 31 (1): 28-50.

[Recommended Video for Homework]
Silicon Valley Season 1 One episode

Week 7: Science, Technology, and Medicine

Martin, Emily. 1991. "The Egg and the Sperm: How Science Has Constructed a Romance Based on Stereotypical Male- Female Roles." *Signs* 16(3):485–501.

CARPENTER, LAURA M. and MONICA J. CASPER. 2009. "A TALE OF TWO TECHNOLOGIES: HPV Vaccination, Male Circumcision, and Sexual Health." *Gender and Society* 23(6):790–816.

[Video Homework]: *The Inventor: Out for Blood in Silicon Valley* (2019)

Week 8: Gender in Creative Industries

Chow, Y.F. (2017). Hong Kong Creative Workers in Mainland China: The Aspirational, the Precarious, the Ethical. *China Information*. 31(1): 43-62.

Chow, Y. F. (2014). Creative industries, showbiz and sexualized young women: The Hong Kong Book Fair. *Communication, Culture and Critique* 7(4): 595-611.

Week 9: Gender and Entrepreneurship

Ahl, Helene and Susan Marlow. 2012. "Exploring the Dynamics of Gender, Feminism and Entrepreneurship: Advancing Debate to Escape a Dead End?" *Organization* 19(5):543–62.

Chu, Priscilla. 2000. "THE CHARACTERISTICS OF CHINESE FEMALE ENTREPRENEURS: MOTIVATION AND PERSONALITY." *Journal of Enterprising Culture* 08(01):67–84.

Milgram, B. Lynne. 2008. "Activating Frontier Livelihoods: Women And The Transnational Secondhand Clothing Trade Between Hong Kong And The Philippines." *Urban Anthropology and Studies of Cultural Systems and World Economic Development* 37(1):5–47.

Week 10: Gender, Social Entrepreneurship and Social Innovation

Lee, Matthew and Laura Huang. 2018. "Gender Bias, Social Impact Framing, and Evaluation of Entrepreneurial Ventures." *Organization Science* 29(1):1–16.

Borquist, Bruce R. and Anne de Bruin. 2019. "Values and Women-Led Social Entrepreneurship." *International Journal of Gender and Entrepreneurship*.

Week 11: Sustainability, Diversity, and Inclusion

Cruz-Torres, Mar'a Luz and Pamela McElwee. 2012. *Gender and Sustainability: Lessons from Asia and Latin America*. University of Arizona Press.

Zietsma, Charlene and Madeline Toubiana. 2019. "Emotion as the glue, the fuel and the rust in

social innovation." In Gerard George. ed. 2019. *Handbook of Inclusive Innovation*. Edward Elgar Publishing.

Week 12: (En)Gendering Innovation, Entrepreneurship, and Leadership I

Keohane, Nannerl O. 2012. *Thinking about Leadership*. Princeton, NJ: Princeton University Press. (Excerpt)

Smith, Wendy K., Marya L. Besharov, Anke K. Wessels, and Michael Chertok. 2012. "A Paradoxical Leadership Model for Social Entrepreneurs: Challenges, Leadership Skills, and Pedagogical Tools for Managing Social and Commercial Demands." *Academy of Management Learning & Education* 11(3):463–78.

Week 13: (En)Gendering Innovation, Intrapreneurship, and Leadership II

Meyerson, Debra E. 2008. *Rocking the Boat: How Tempered Radicals Effect Change Without Making Trouble*. Boston, MA: Harvard Business Review Press. (Excerpt)

[Revisit]: Correll, Shelley J. 2017. "SWS 2016 Feminist Lecture: Reducing Gender Biases In Modern Workplaces: A Small Wins Approach to Organizational Change." *Gender & Society* 31 **(6):725–50.**

Recommended Readings

Alsos, Gry Agnete, Elisabet Ljunggren, and Ulla Hytti. 2013. "Gender and Innovation: State of the Art and a Research Agenda." *International Journal of Gender and Entrepreneurship; Bingley* 5(3):236–56.

Bray, Francesca. 2007. "Gender and Technology." *Annual Review of Anthropology* 36(1):37–53.

Cech, Erin A. and William R. Rothwell. 2018. "LGBTQ Inequality in Engineering Education." *Journal of Engineering Education* 107(4):583–610.

Chandra, Yanto and Linda Wong. 2016. *Social Entrepreneurship in the Greater China Region: Policy and Cases*. New York: Routledge.

Charles, Maria. 2017. "Venus, Mars, and Math: Gender, Societal Affluence, and Eighth Graders' Aspirations for STEM." *Socius: Sociological Research for a Dynamic World* 3:237802311769717.

Davis, Gerald F. and Christopher J. White. 2015. *Changing Your Company from the Inside Out: A Guide for Social Intrapreneurs*. Boston, MA: Harvard Business Review Press. (Ch 2: Four Kinds of Social Innovations in Organizations)

Hehenberger, Lisa, Johanna Mair, and Ashley Metz. 2019. "The Assembly of a Field Ideology: An Idea-Centric Perspective on Systemic Power in Impact Investing." *Academy of Management Journal*.

The Sasakawa Peace Foundation and the Asia Women Impact Fund. 2019. A Gender-Inclusive Southeast Asia through Entrepreneurship. Accessed here: https://www.spf.org/en/gender/publications/20190624.html

Vasi, Ion Bogdan. 2009. "New Heroes, Old Theories? Toward a Sociological Perspective on Social Entrepreneurship." In Rafael Ziegler ed. *An Introduction to Social Entrepreneurship*. Edward Elgar Publishing.

Wynn, Alison T. and Shelley J. Correll. 2018. "Puncturing the Pipeline: Do Technology Companies Alienate Women in Recruiting Sessions?" *Social Studies of Science* 48(1):149–64.

Yip, Din Yan, Ming Ming Chiu, and Esther Sui Chu Ho. 2004. "Hong Kong Student Achievement in OECD-PISA Study: Gender Differences in Science Content, Literacy Skills, and Test Item Formats." *International Journal of Science and Mathematics Education* 2(1):91–106.