

Course Title: *Measurements and the Measured in History, 1700s to Present Day* (HH4090)

Course Description: This course aims to examine present-day metrology, measuring conventions, and the hegemony of numbers on a timeline historicizing measurement practices and the development of the quantitative and quantifying mentalité. Focusing on Asia and the global South spanning the last four centuries, the course aims to rethink narratives centred on the assimilation into the “global” order, and to reconsider the region’s characterization as a pre-numerate, passive recipient of metric standards. Looking at the processes and objects of measurement entails looking further beyond arithmetic and computation methods, and this course is not intended to be read as history of mathematics; of central importance to the course objectives is the critical thinking of the social embeddedness of measurements of/in states, empire, international systems, as well as commerce, science, technology, health, the environment, and ways of living. By looking at the acts, practices, mindsets and rhetoric of measuring and numbering, the universality of international standards, the numbering of bodies and behaviours, and the abstract quantification of time and space will be cast as historically contingent and situated, and anything but a foregone conclusion in the trajectories of human history. Topics and issues to be considered in class include (but are not limited to): quantitative attitudes and modernity in Asia, moral dimensions of accuracy, conflicts in metrological reform, metrological authority in empire, the probability of vice, census-making, commensurability and translation, the politics and unequal stakes in standardization, defining the workday, numeracy in education, scientific standards and the quest for precision, counting calories and steps, calculation devices, quantifying in the home, meteorology, and the historians’ usage of numerical data.

Week 1	Introduction: Historicizing the Quantitative Mindset
	Part I: Numbers of Who, What, and When
Week 2	Sociohistorical Issues & Periodicity
Week 3	Situating Asia: Sovereignty, Empire, and Governance
Week 4	Situating Asia: Concomitancy
	Part II: Calculability
Week 5	Statistics and Census
Week 6	Scales of Trade, Time, and Space
Week 7	Instruments of Precision
Recess	No Class
	Part III: Standardization and Uniformity
Week 8	The International and the Intranational
Week 9	Productivity
Week 10	Manufacturing Sameness
	Part IV: Numbering Lives and Living
Week 11	Numeracy and Women
Week 12	Measuring and Recording Health
Week 13	Measuring the Environment

Course Assessment

100% Continual Assessment, consisting of:

Attendance & Participation	20%
Digital Exhibition (with in-class presentation)	35%
Final Research Paper	45%

(1) Participation & Attendance (20%)

Student attendance and participation, including four short reflection pieces on the themes and historical material discussed in class. The reflection pieces are intended as a journaling exercise in thinking about commonalities and continuities that may exist between past and present measurement attitudes and practices. Students may use the reflection pieces as a thematic review on a topic related to the week's theme, further discussion threads raised in class, or as personal commentaries on relevant, recent news coverage.

The bulk of assessment will come from a digital exhibition assignment and a final research paper on a subject of the student's choosing.

(2) Digital Exhibition (35%)

The exhibition assignment is designed to position thinking with and through historical databases and archives on the subject of measuring things with a geographical focus on Asia and the global South. Targeting methods of reaching beyond a reading and seeing audience in the curation and display of historical artefacts (both tangible and intangible) and the presentation of ordered information not wholly visual in nature, students are free to take a step beyond written traces of the archive to explore the tactile and auditory nature of objects and other historical fragments. Through the arrangement of orders and sequences, the organized exhibitions will reflect different ways of knowing and organizing things, allowing space for multiple interpretations, narratives, and coexistent periodicities in the history of measurements and standardization. Presentation of the digital exhibition to the class will take place during the second half of the semester. (Group or individual assessment TBC)

(3) Final Research Paper (4000 words) (5% for outline, 40% for final paper; total 45%)

Students can choose to explore independent topics or develop further on themes from a segment of their exhibition in the final research paper.

Sample Reading List (tentative)

Appadurai, Arjun. 'Number in the Colonial Imagination'. In *Orientalism and the Postcolonial Predicament: Perspectives on South Asia*. University of Pennsylvania Press, 1993.

Barak, On. *On Time: Technology and Temporality in Modern Egypt*. University of California Press, 2013.

Berg, Maxine, and Felicia Gottmann, Hanna Hodacs, and Chris Nierstrasz (ed.). *Goods from the East, 1600 – 1800: Trading Eurasia*. Palgrave Macmillan. 2015.

Ben-Zaken, Avner. *Cross-cultural Scientific Exchanges in the Eastern Mediterranean, 1560 – 1660*. John Hopkins University, 2010.

Blank, Paula. *Shakespeare and the Mismeasure of Renaissance Man*. Cornell University Press, 2006.

- Brown, Philip C. "Never Shall the Twain Meet: European Land Survey Techniques in Tokugawa Japan," *Chinese Science* 9 (1989): 53 – 79.
- Crosby, Alfred. *The measure of reality: quantification in western Europe, 1250 – 1600*. Cambridge University Press, 1997.
- Cordery, Celine. [Myanmar Traditional Medicine: the making of a national heritage](#). *Modern Asian Studies*. 2020.
- Frumer, Yulia. *Making Time: Astronomical Time Measurement in Tokugawa Japan*. University of Chicago Press, 2018.
- Ghosh, Arunabh. *Making it count: statistics and statecraft in the Early People's Republic of China*. Princetown University Press, 2020
- Gooday, Graeme. *The morals of measurement: accuracy, irony, and trust in Late Victorian Electrical Practice*. Cambridge University Press, 2009.
- Gordin, Michael D. 'Measure of All the Russias: Metrology and Governance in the Russian Empire'. *Kritika: Explorations in Russian and Eurasian History* 4, no. 4 (2003): 783–815.
- Henshaw, John M.. *Does Measurement Measure Up? How Numbers Reveal and Conceal the Truth*. John Hopkins University, 2006.
- Hong, Sung-Hwa. Official and Private Weights and Measures (Duliangheng 度量衡) during the Qing Dynasty and Contemporary Perceptions. *Sungkyun Journal of East Asian Studies* 20 (2020). [Project MUSE - Official and Private Weights and Measures \(Duliangheng 度量衡\) during the Qing Dynasty and Contemporary Perceptions \(jhu.edu\)](#)
- Ittmann, Karl. *The demographics of empire: the colonial order and the creation of knowledge*. Ohio University Press, 2011.
- Kockelman, Paul. *The Chicken and the Quetzal: Incommensurate Ontologies and Portable Values in Guatemala's Cloud Forest*. Duke University Press, 2016.
- Kula, Witold. *Measures and Men*. Translated by R. Szepter. Princeton University Press, 1986.
- Lieffers, Caroline. "'The Present Time is Eminently Scientific': The Science of Cookery in Nineteenth-Century Britain," *Journal of Social History* 45, no. 4, (2012): 936–959.
- Lugli, Emanuele. *The Making of Measure and the Promise of Sameness*. University of Chicago Press, 2019.
- Masselos, Jim. "Bombay time/standard time," *South Asia: Journal of South Asian Studies* 40, no. 2 (2017): 281 – 284.
- Maxwell-Stuart, Hamish, Matthew Cracknell, and Kris Inwood. "Height, crime, and colonial history." *SOLON Law, Crime, and History* 5, no. 1 (2015):25 – 42.
- Mitchell, Timothy. *Rule of Experts: Egypt, Techno-Politics, Modernity*. University of California Press, 2003.
- Ogle, Vanessa. *The Global Transformation of Time: 1870 – 1950*. Cambridge, Massachusetts: Harvard University Press, 2015.

- Por, Heong Heong, and Tan Miao Ing. "Contested Colonial Metrological Sovereignty: The *daching* riot and the regulation of weights and measures in British Malaya," *Modern Asian Studies* (2021): 1 – 21.
- Porter, Theodore M.. *Trust in numbers: the pursuit of objectivity*. Princeton University Press, 2020.
- Reiss, Benjamin. *Wild Nights: How Taming Sleep Created our Restless World*. Basic Books, 2017.
- Safier, Neil. *Measuring the New World: Enlightenment Science and South America*. University of Chicago Press, 2008
- Schaffer, Simon. Ceremonies of Measurement: Rethinking the World History of Science. [Annales. Histoire, Sciences Sociales - English Edition](#) , [Volume 70](#) , [Issue 2](#) , June 2015 , pp. 335 - 360
- Schlaudt, Oliver and Lara Huber (ed.). *Standardization in measurement: philosophical, historical and sociological issues*. Pickering & Chatto, 2015.
- Singerman, David Roth. "Inventing Purity in the Atlantic Sugar World, 1860 – 1930," *Enterprise & Society* 16, no. 4 (2015): 780 – 791.
- Seo, Ho-chul. "The process of the metric system's acceptance in Korea and its international context," *The Review of Korean Studies* 11, no. 3 (September 2008): 37-59.
- Tong, Lam. *A Passion for Facts: Social Surveys and the Construction of the Chinese Nation-State, 1900-1949*. University of California Press, 2011.
- Velkar, Aashish. 'Rethinking Metrology, Nationalism and Development in India, 1833–1956', *Past and Present*, 239(1), May 2018, pp. 143–179.
- Wahlberg, Ayo. 2012. 'Family Secrets and the Industrialisation of Herbal Medicine in Postcolonial Vietnam'. In *Southern Medicine for Southern People: Vietnamese Medicine in the Making*, edited by Monnais, Laurence, Michele Thompson, C. and Wahlberg, Ayo. Newcastle upon Tyne: Cambridge Scholars Publishing, pp. 153–178.
- Wahlberg, Ayo. 2014. 'Herbs, Laboratories, and Revolution: On the Making of a National Medicine in Vietnam'. *East Asian Science, Technology and Society: An International Journal* 8, pp. 43–56.
- Wise, M.N. (ed.), 1995, *The Values of Precision*, NJ: Princeton University Press.