Course No.	M2649.001800	Lecture No.		Course Title (Subtitle)	Climate Change and Global Food Security	Credit	3-3-0
Representative Instructor	Name	Jisang Yu	(post :	)	Homepage	https://sites.google.com/view/jisangyu/	
	E-mail	jisangyu@ksu.edu			Phone No.	+1-530-902-3610	
	Office Hour/Place : By appointment	Zoom					

Prerequisite Course	None
*1. Purpose of Course	The economic importance of climate change is hard to overstate. Agriculture, as its production crucially depends on nature, consistently faces climate change risks. In this course, we focus on the interaction of climate change and global food security through the lens of economics and sustainability and its economic and policy implications. The objective of the course is twofold: i) to understand how climate risks affect global food production and food security, and ii) to explore agricultural policies and interventions that aim to build climate resilience, improve food security, and promote agricultural development.
*2. Materials and Reference	No textbook required. The course will be based on lecture notes and assigned readings.

*3. Evaluation (%)

Attendance	Assignment	Midterm/	Final	Additional Evaluation	Attitude	Other	합계
15%	30%	25%	30%	NA	NA		100

Attendance Policy :	Students who are absent for over 1/3 of the class will receive a grade of 'F' or U' for the course. (Exceptions can be made when the cause of absence is deemed unavoidable by the course instructor.)
Other Remarks :	

*4. Lecture Plan	**Class Dates: Mon/Wed/Thu, 06/27/2022 – 07/29/2022** **Class Time: Mon/Wed/Thu, 09:00am – 12:00pm (Korea Standard Time, via Zoom)** **Online : Class 1- 8 and 12 – 15(Synchronous Zoom and Recording Combined)** **In-person : Class 9 – 11 (7/18～7/21)** ***Week 1: Climate Change -- Introduction*** IPCC, 2018, *Global Warming of 1.5°C*, Geneva, Switzerland World Bank, 2013. *World Development Report 2014: Risk and Opportunity - Managing Risk for Development*. Dell, M., Jones, B.F. and Olken, B.A., 2012. Temperature shocks and economic growth: Evidence from the last half century. *American Economic Journal: Macroeconomics*, 4(3), pp.66-95. Hsiang, S., Kopp, R., Jina, A., Rising, J., Delgado, M., Mohan, S., Rasmussen, D.J., Muir-Wood, R., Wilson, P., Oppenheimer, M. and Larsen, K., 2017. Estimating economic damage from climate change in the United States. *Science*, 356(6345), pp.1362-1369. ***Week 2: Climate and Weather Impacts on Global Food Production*** Schlenker, W. and Roberts, M.J., 2009. Nonlinear temperature effects indicate severe damages to US crop yields under climate change. *Proceedings of the National Academy of Sciences*, 106(37), pp.15594-15598. Lobell, D.B., Schlenker, W. and Costa-Roberts, J., 2011. Climate trends and global crop production since 1980. *Science*, 333(6042), pp.616-620. Perry, E.D., Yu, J. and Tack, J., 2020. Using insurance data to quantify the multidimensional impacts of warming temperatures on yield risk. *Nature Communications*, 11(1), pp.1-9. ***Week 3: Economics of Risk and Agricultural Production (Midterm/Presentation)*** Sandmo, A., 1971. On the theory of the competitive firm under price uncertainty. *American Economic Review*, 61(1), pp.65-73. Binswanger, H.P. and Rosenzweig, M.R., 1986. Behavioural and material determinants of production relations in agriculture. *The Journal of Development Studies*, 22(3), pp.503-539. Holden, S.T., 2018. Fertilizer and sustainable intensification in Sub-Saharan Africa. *Global Food Security*, 18, pp.20-26. ***Week 4: Adaptation, Trade, and Global Food Security*** Reilly, J., Hohmann, N. and Kane, S., 1994. Climate change and agricultural trade: who benefits, who loses? *Global Environmental Change*, 4(1), pp.24-36. Lybbert, T.J., Smith, A. and Sumner, D.A., 2014. Weather shocks and inter-hemispheric supply responses: implications for climate change effects on global food markets. *Climate Change Economics*, 5(04), p.1450010. Cui, X., 2020. Climate change and adaptation in agriculture: Evidence from US cropping patterns. *Journal of Environmental Economics and Management*, 101, p.102306.

<table>
<tr><td colspan="2"></td><td>Müller, B., Hoffmann, F., Heckelei, T., Müller, C., Hertel, T.W., Polhill, J.G., van Wijk, M., Achterbosch, T., Alexander, P., Brown, C. and Kreuer, D., 2020. Modelling food security: Bridging the gap between the micro and the macro scale. Global Environmental Change, 63, p.102085.

Week 5: Interventions and Policies (Final)

McIntosh, C., Sarris, A. and Papadopoulos, F., 2013. Productivity, credit, risk, and the demand for weather index insurance in smallholder agriculture in Ethiopia. Agricultural Economics, 44(4-5), pp.399-417.

Falco, S.D., Adinolfi, F., Bozzola, M. and Capitanio, F., 2014. Crop insurance as a strategy for adapting to climate change. Journal of Agricultural Economics, 65(2), pp.485-504.

Adong, A., Tinker, J., Levine, D., Mbowa, S. and Odokonyero, T., 2020. Encouraging fertilizer adoption through risk free sales offer: A randomized control trial in Uganda. World Development Perspectives, 19, p.100230.

Smith, V.H. and Glauber, J.W., 2020. Trade, policy, and food security. Agricultural Economics, 51(1), pp.159-171.</td></tr>
<tr><td colspan="2">5. Additional Notes for Students</td><td></td></tr>
<tr><td rowspan="3">6. Assistance for Students with Disabilities</td><td>Class</td><td>○ Visual Impairment: Make textbooks(digital textbook, braille textbook, enlarged textbook etc.), Allow note takers
○ Physical Disability: Make textbooks (digital textbook), Allow note takers and assistants
○ Hearing Impairment: Allow note takers and translators, Allow lecture recording
○ Health Impairment: Excuse absence due to health problems, Allow note takers
○ Learning Disability: Allow note takers
○ Intellectual Disability / Autism Spectrum Disorder: Allow note takers and mentors</td></tr>
<tr><td>Assignment & Evaluation</td><td>○ Visual Impairment / Physical Disability / Hearing Impairment / Health Impairment / Learning Disability: Extend assignment deadlines, Offer alternate assignment submission and response method, Extend testing period, Offer alternate testing method, Offer different testing room
○ Intellectual Disability / Autism Spectrum Disorder: Offer individualized assignments and alternative evaluations</td></tr>
<tr><td>Others</td><td>Students who take this course can get appropriate level of support service including the support listed above depending on the students′ individual characteristics and needs through consultation with professors and the Support Center for Students with Disabilities. If you have any questions concerning support service for students with disabilities you can contact Professor ***(Contact Information) or Support Center for Students with Disabilities (02-880-8787).</td></tr>
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