

Course	Global Issues and Global society: Environmental Pollution & Health Effects
Course No.	01ZZ426
Credits	1 credit
Grade	1 <sup>st</sup> year
Timetable	Fall A, Wednesday 5,6 Period, (Room 4E608)
Instructor	Yoshito Kumagai (Faculty of Medicine), Yasuhiro Shinkai (Faculty of Medicine)
Course Overview	<p>1. The international community is facing various problems caused by several chemical exposure as "environmental pollution and health effects". In this course, substances that affect the human body and that are extensively present in the environment such as nanoparticles, exogenous endocrine disruptors such as dioxin, cadmium, arsenic, organochlorine compounds, methylmercury and organic tin will be covered.</p> <p>2. It is related to the 3rd goal of the "Global Sustainable Developmental Goals (SDGs)" posed by the United Nations.</p> <p>3. Clarification of issues related to sociality in the international community. Research to find solutions for the problems caused by the lack of sociality, actual situation of environmental pollution and health damage on the regional and global scale, lecture on the possibility of a scientific approach to problem solving. Time for Q&amp;A after the lecture.</p>
Remarks	Graduate General Education Course, Lecture series for Retaining Internationalized Characters
Course Type	Lectures
Link between Course Objectives and Activities	<p>Students will study Health security issues through understanding the relation between environmental pollution and health by taking this course.</p> <ul style="list-style-type: none"> <li>• This course series promote students' motivation to work and play a role in international societies.</li> <li>• This course series are closely linked to various activities in global societies and cultural diversity of the world. Students are able to polish their sense to be global personnel resources.</li> </ul>
Academic Goal	In a multinational environment, cultivate the international sense and improve the understanding for an international society. Develop the ability to act as a global talent, finally cultivate skills and resourcefulness to play an active role in the international society.
Course Schedule	<p>Day 1</p> <ol style="list-style-type: none"> <li>1. Introduction ( Yoshito Kumagai, Yasuhiro Shinkai )</li> <li>2. Nanomaterials! Let's broaden our minds, Asbestos? ( Jun Kanno )</li> </ol> <p>Day 2</p> <ol style="list-style-type: none"> <li>1. Cadmium contamination of foods and its potential health risk ( Yasuhiro Shinkai )</li> <li>2. Environmental organotin and its mammalian neurotoxicity ( Yaichirou Kotake )</li> </ol> <p>Day 3</p> <ol style="list-style-type: none"> <li>1. Global pollution of groundwater by arsenic and its versatile health effects in humans ( Seiichiro Himeno )</li> <li>2. Dioxin and Endocrine Disrupting Chemicals and Health ( Chiharu Tohyama )</li> </ol> <p>Day 4</p> <ol style="list-style-type: none"> <li>1. International regulation on ozone-depleting substances and health</li> </ol>

	<p>impact of alternatives ( Gaku Ichihara )</p> <p>2. Effects of chemical exposure on central nervous system in animal models ( TinTin Win Shwe )</p> <p>Day 5</p> <p>1. Biological factors related to health effects of methylmercury exposure ( Gi-Wook Hwang )</p> <p>2. Exposome (life-course total exposure): A paradise shift in epidemiology ( Shoji Nakayama )</p>
Course Prerequisites and Advisories	<p>Interests in Environmental Pollution &amp; Health Effects about global problems derived from a lack of stable social relationships. Motivation to actively participate in discussion during the lecture.</p> <p>Learn about “Sustainable Developmental Goals (SDGs), especially Goals 3 proposed by the United Nations and associated matters.</p>
Grading Philosophy (Percentage/ Criteria/ Methodology)	<p>Class Participation (Positive contribution to discussion in class) (70%); Essay Assignment (30%)</p>
Self-Directed Learning Other Than Coursework	<p>Study suggested reading materials (books, articles, public reports, etc.) provided by instructors during the class.</p> <p>Attend seminars and workshops on related topics.</p>
Textbooks, References and Supplementary Materials	<p>Web site of the United nations on SDGs.  <a href="https://sustainabledevelopment.un.org/">https://sustainabledevelopment.un.org/</a>  References and supplementary reading materials will be provided to registered students.</p>
Office Hours	<p>Prof. Yoshito Kumagai  (Students need appointment via e-mail: <a href="mailto:yk-em-tu@md.tsukuba.ac.jp">yk-em-tu@md.tsukuba.ac.jp</a>)</p>
Other (i.e. Expectations on Classroom, Conduct and Decorum etc.)	<p>None</p>
Related Courses	
Keywords	<p>Environmental pollution, health damage, biological response, exposome, toxicity</p>