Research Ethics Education Framework

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<tr><th colspan="2"></th><th>1. Academic integrity</th><th>2. Roles and social responsibilities of researchers</th><th>3. Responsible Conduct of Research (RCR)</th><th>4. Compliance with laws and ordinances</th></tr>
<tr><td colspan="2">Main objectives</td><td>Understand and promote academic integrity
・Conform to standards expected of Science Tokyo students
・Adhere to ethical practices while conducting research
・Understand and share the vision and values of the Code of Conduct for Researchers at Science Tokyo</td><td>Understand and perform roles and social responsibilities of researchers
・Recognize that researchers are responsible citizens contributing to society
・Understand recent ethical issues in research and academia
・Understand the impact science and technology have on the environment and society</td><td>Understand and adhere to the principles and values of RCR
・Understand freedom and obligations in conducting research
・Handle data correctly
・Understand the concept of authorship</td><td>Be knowledgeable about and compliant with regulations and policies related to RCR such as:
・regulations and policies set forth by the government or Science Tokyo in regard to research
・rules regarding research misconduct
・research fund guidelines</td></tr>
<tr><td rowspan="3">Level 3 (Doctoral-level study)</td><td>Review</td><td colspan="4">Laboratories are responsible for: 1. explaining research ethics education (level 3) to students when they enter a doctoral program; 2. asking students to complete and submit a Level 3 Checklist every year to monitor their progress; 3. confirming students' attainment of targets by reviewing the Checklist in their final year of a doctoral program. (Such attainment may be included in the completion requirements for degree programs at the discretion of Departments.)</td></tr>
<tr><td>Educational target</td><td colspan="4">Based on the completion of level 2,
deepen knowledge and become able to provide guidance</td></tr>
<tr><td>Learning methods (courses and resources)</td><td colspan="4">【Courses】Liberal Arts (Humanities and Social Science) Courses and Entrepreneurship Education Courses (600-level); courses on science, engineering, or research ethics offered by Departments (600-level)
【Online courses】eAPRIN　basic courses (e-learning); eAPRIN JST courses for scientists and engineers (e-learning); MOOC and SPOC; JSPS's e-Learning Course on Research Ethics (el_CoRE)
【Others】Research ethics education in laboratory settings; The Lab (visual education material distributed by JST); regulations or guidelines regarding research ethics; Science Tokyo's research ethics web pages for current students; find ethical issues at each and every opportunity</td></tr>
<tr><td rowspan="2">Level 2 (After starting Independent Research Project until completing master's-level study)</td><td>Review</td><td colspan="4">Laboratories are responsible for: 1. explaining research ethics education (level 2) to students when they start their Independent Research Project or when they enter a master's program; 2. asking students to complete and submit a Level 2 Checklist every year to monitor their progress; 3. confirming students' attainment of targets by reviewing the Checklist in their final year of the master's program. (Such attainment may be included in the completion requirements for degree programs at the discretion of Departments.)</td></tr>
<tr><td>Educational target</td><td>(a) Establish awareness as a Science Tokyo student
(b) Develop ethical sensibility that allows one to identify ethical issues involved in the implementation of research and technology (advanced level)
(c) Acquire skills required to resolve ethical issues (advanced level)</td><td>(a) Understand the roles and social responsibilities of researchers
(b) Understand ethical principles relevant to one's field (engineering, science, bioscience, information technology, psychology, etc.) Examples may include engineering ethics, information ethics, and ethics for research involving human participants. (advanced level)</td><td>(a) Acquire knowledge and understanding of responsible conduct of research (RCR) and research misconduct (advanced level)
(b) Acquire knowledge and understanding of correct data handling for RCR (advanced level)
(c) Understand the meaning and importance of authorship (advanced level)
(d) Acquire knowledge and a positive attitude for building a sound environment that promotes RCR</td><td>(a) Acquire knowledge and understanding of laws and policies related to RCR (including those that apply to research involving human participants) (advanced level)
(b) Acquire knowledge and understanding of regulations and policies concerning research misconduct
(c) Acquire knowledge and understanding of regulations and policies concerning collaborative research
(d) Acquire knowledge and understanding of conflicts of interest
(e) Become able to use research funds in an appropriate manner</td></tr>
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	Learning methods (courses and resources)	【Courses】Liberal Arts (Humanities and Social Science) Courses and　Entrepreneurship Education Courses (400- and 500-levels);　Courses on science, engineering, or research ethics offered by Departments (400- and 500-levels) 【Online courses】eAPRIN　basic courses (e-learning); eAPRIN JST courses for scientists and engineers (e-learning); MOOC and SPOC; JSPS e-Learning Course on Research Ethics (el_CoRE) 【Others】Research ethics education in laboratory settings; The Lab (visual education material distributed by JST); regulations or guidelines regarding research ethics; Science Tokyo's research ethics web pages for current students; find ethical issues at each and every opportunity			
Level 1 (Before starting Independent Research Project)	Review	Students will learn about research ethics courses/programs by attending freshman orientations or briefings on undergraduate majors, or participating in research projects. Laboratories are responsible for confirming students' attainment of targets by reviewing the Level 1 Checklist before students start their Independent Research Project (Such attainment may be included in the requirements for starting an Independent Research Project at the discretion of Departments.)			
	Educational target	(a) Establish awareness as a Science Tokyo student (b) Develop ethical sensibility that allows one to identify ethical issues involved in the implementation of research and technology (basic level) (c) Acquire skills required to resolve ethical issues (basic level)	(a) Understand the roles and social responsibilities of researchers (b) Understand ethical principles relevant to one's field (engineering, science, bioscience, information technology, psychology, etc.) Examples may include engineering ethics, information ethics, and ethics for research involving human participants. (basic level)	(a) Acquire knowledge and understanding of responsible conduct of research (RCR) and research misconduct (basic level) (b) Acquire knowledge and understanding of correct data handling for RCR (basic level) (c) Understand the meaning and importance of authorship (basic level)	(a) Acquire knowledge and understanding of laws and policies related to RCR (including those that apply to research involving human participants) (basic level)
	Learning methods (courses and resources)	【Courses】 Visionary Project (100-level required courses); Ethics in Engineering A, B, and C (100- to 300-levels); Liberal Arts Final Report (300-level required courses); First-Year Courses (100-level); courses involving laboratory experiments (100- to 300-levels); major courses on science, engineering, or research ethics offered by Departments (200- and 300-levels) 【Online courses】MOOC and SPOC; JSPS e-Learning Course on Research Ethics (el_CoRE) 【Others】Regulations or guidelines regarding research ethics; Tokyo Tech's research ethics web pages for current students; find ethical issues at each and every opportunity			