

Science of Science, Technology and Innovation Policy (SciSIP) Program
Hub Institutions for Human Resources Development
and Fundamental Resources

Development Plan for Area-Focused Hub Institution

STIG (Science, Technology and Innovation Governance) Program



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Targeted HR development

Who are needed to lead the STIG arena in Japan?

Types of SciSIP HR to be cultivated through the national program

Policy-making specialists	Specialists in policy-making processes and evidence-making in the broad field of STI at the national government and relevant research institutions.
R&D management specialists	Specialists who manage the STI programs at research institutions and private corporations.
R&D specialists	Scientists in the field of R&D who are sensitive to societal concerns and who can provide useful information for policy-making efforts
STI policy researchers	Researchers who study STI policy.

“Area-focused hub institution” at the University of Tokyo will focus primarily on the development of policy-making specialists and STI policy researchers. R&D management specialists are also expected to complete our program.

In order to take advantage of our comprehensive university system, we will seek HR development that cuts across natural and social science disciplines. In the social science fields, departments of law, public administration, and economics will join the program.

Expected HR developments

Policy-making specialists: They have expertise in policy-making processes and policy analysis, as well as contextual knowledge in each specific area of science and technology grounded in the fields of S&T R&D and deployment.

STI policy researchers: Their fields are not necessarily limited to STI policy. Instead, each of them has expertise in public administration, law, economics, or technology management and focuses on STI policy as a case study field (3 teaching staff members will be appointed).



These experts are expected to have...

Knowledge and skills in policy-making processes

including: management and design of policy processes for STI policy; design of processes for involving a wide range of stakeholders; institutional arrangements for such policy processes; knowledge production and usage in policy processes

Knowledge and skills of evidence-making and using it appropriately

including: developing quantitative evidence and evaluative framework on the effectiveness of individual STI efforts, multi-dimensional synthesis of evidence (including qualitative ones); design and evaluation of regulatory mechanisms on science and technology

Requirements for completing the HR program and certificate

We will start a new interdepartmental educational program (部局横断型教育プログラム) on Science for STI Policy (*managerial headquarters will be located at the public policy school) for graduate-level students.

When a students complete the requirements (12 units courses), the deputy president of the University will issue a certificate.

cf. Possibility of Intern Program

cf. *University of Tokyo has set up 5 inter-departmental programs since 2008 including Ocean Alliance and Gerontology.



Proposed requirements for the STIG program at the Univ. of Tokyo

Core practicum (req.)

Acquire skills in synthesizing different kinds of knowledge into policy through practicum

Basic courses (elective)

- (a) Policy processes and institutions
- (b) Evidence-making techniques

Applied courses

Cultivate advance skills in policy processes, institutions, and evidence-making techniques

Field-specific research courses

Expand practical skills by providing contextualized knowledge specific to each field of practice

Requirements

Core practicum (req.)	2 units
Basic courses (a) (elective)	2 units
Basic courses (b) (elective)	2 units
Basic, applied, and field specific research courses	6 units
Total	12 units

Core practicum (req.)

STI Policy Practicum (科学技術イノベーション政策演習)★

Newly appointed faculty members (policy processes, economics, and S&T system engineering)

This practicum focuses on actual cases of STI policy issues. Students from different departments will work together under the supervision of faculty member in the seminar format. They will work together to produce policy proposals grounded in scientific evidence. The final session will be structured as a policy proposals competition, inviting practitioners from the field as the evaluator. By asking the students from different departments to collaborate, we will nurture their communication and collaboration skills that are necessary for influencing public policy. This class will also serve as a venue for the participating students to develop networks across the departments.

[★: new courses, ○: existing courses with major revisions]

Basic courses (elective)

(a) Policy processes and institutions

- **Policy Processes (J)**
Kuniaki Tanabe (Public Policy, Professor)
- **Negotiation and Consensus Building (J)** ○
Masahiro Matsuura (Public Policy, Assoc. Professor)
- **Science, Technology and Public Policy (E)**
Hideaki Shiroyama (Public Policy, Professor) and
Masashi Yarime (Frontier Science, Assoc. Professor)

(b) Evidence-making techniques

- **Economic Analysis of Public Policy (J)**
- **Fundamentals of Mathematics-based Management: 数理経営基礎 (J)**
Nariaki Nishino (Engineering School, Assoc. Professor)
- **Risk Analysis (J)** ★

Applied courses

- **Stakeholder analysis and policy process management**★
New faculty member (policy processes)
- **Economic analysis of innovations**★
New faculty member (economic analysis)
- **S&T system engineering**★
New faculty member (S&T system eng.)
- **Innovation, organization, and institution**★
Noriyuki Yanagawa , etc. (Econ.)
- **S&T and Industry Policy**
Ichiro Sakata (PARI)
- **Advanced regulatory science**★
Yasunori Baba (RCAST), Katsuhiro Nishinari (RCAST), Tatsuhiko Kodama (RCAST)
- **Technology Assessment**★
Taketoshi Taniguchi (PARI), Go Yoshizawa (visiting), Hideaki Shiroyama (Public policy)
- **Regulatory policy**
Toshihiro Matsumura (Econ.)
- **Management of Intellectual Properties**
Toshiya Watanabe (RCAST)
- **S&T Communication**
Osamu Sakura (Info Studies)
- **S&T Planning**
Yuko Fujigaki (Arts & Science)
- **Innovation and Sustainability (E)**
Masaru Yarime (Frontier Science)
- **Special seminar on Science, Technology and Innovation Policy (E)**★
Short-term visiting professors from partnership universities

Field specific research courses (分野別研究科目)

- **Advanced energy technologies, management, and policy**★
Gento Mogi (Engineering), Hisashi Yoshikawa (Public policy), etc
- **Space R&D and public policy**○
Kazuhiro Nakatani (Law), Shinichi Nakasuka (Engineering), Motoko Uchitomi (visiting)
- **Marine S&T Policy**○
Masahiro Matsuura (Public policy), Hideaki Murayama (Engineering)
- **Medical technologies and their economic analysis**★
Hiroshi Ohashi (Econ.) and Akio Osnishi (Public policy)
- **Information technologies and better government**
Hirokazu Okumura (Public policy) and Shuichi Sakai (Info. Science)
- **Web engineering and business models**○
Yutaka Matsuo (Engineering)
- **International Public Health** ○
Kenji Shibuya (Medical)

Timeline

FY2011	FY2012	FY2013	FY2014	FY2015	FY2016-
<p>[Developmental phase]</p> <ul style="list-style-type: none">• March : International Symposium on STI Policy <p>Preparing for interdepartmental educational program, finding rooms, web site set up, recruits, international liaison.</p>	<p>[Finalizing the educational program]</p> <ul style="list-style-type: none">• Hire core curriculum faculty• Intl. Symposium on educational programs• Working groups for collaboration between researchers and practitioners• Curriculum ad team development, some experiments	<p>[First year of the educational program]</p> <ul style="list-style-type: none">• Facilitate interaction between participating stu.s.• Improve the working group, case studies, Intl. symposiums and liaisons• Launching Educatoinal Program in April (orientation)	<p>[Second year of the educational program]</p> <ul style="list-style-type: none">• First batch of graduates expected• Hosting academic society meeting.• Improve the working group, case studies, Intl. symposiums and liaisons.• Student feed-back workshop in July, Retreat of core faculty members in Sept.	<p>[Third year of the educational program]</p> <ul style="list-style-type: none">• Major restructuring of the curriculum according to the student feedbacks.• Continue improving the interdepartmental program by integrating updated research outcomes.	<ul style="list-style-type: none">• Revise curriculum every three years.• Track graduates every two years. (quantitative and qualitative evaluation of the educational program)• Improve the working group, case studies, Intl. symposiums and liaisons.