IJEP India – Japan

Industry-Academia-Government Collaborative Education Program

THE UNIVERSITY OF TOKYO

MEXT Re-Inventing Japan Project (2014-2019)

New technology created by you

The India-Japan Education Program (IJEP) will give you the opportunity to do cutting-edge research at the University of Tokyo in railway technology, social infrastructure systems, innovation, technology management, and information science.

Coordinator's Message

Professor Satoshi Watanabe IJEP Coordinator, Director, Center of International Affairs IIIEE, School of Engineering

ndia is undergoing dramatic development and is becoming a superpower with a diverse culture and social structure. India is also becoming an increasingly important partner of Japan, which is reflected in, for example, a one trillion yen investment from Japan to India. The investment is to be used in the railway sector for official and private development assistance. There are also a wide variety of technical, management, and policy issues that must be solved in India. India and Japan must cooperate to solve these problems.

The India-Japan Education Program (abbreviated as IJEP) is a collaborative industry-academia-government linking effort that was adopted by the School of Engineering and the School of Information Science and Technology at the University of Tokyo as part of the Re-Inventing Japan Project (Ministry of Education, Culture, Sports, Science, and Technology) in 2014. The purpose of this five-year program is to foster human resources capable of being globally active and to internationalize higher education while assuring quality. The theme of the program activities is "Go Global," as proposed by the University of Tokyo.

IJEP offers educational programs, collaborates with several schools (including Indian Institutes of Technology (IIT), and the Indian Institute of Management), and works in cooperation with government agencies and related companies. It aims to contribute to the advancement of high-quality human resources who are qualified to lead Indian development. For Japanese students, collaborative learning with excellent students from the IITs is expected to strengthen the sophistication of the University of Tokyo's education. As IJEP is also a consortium with Japanese and Indian governments and companies, the program promotes not only human resource education, but also the establishment of a win-win



relationship between India and Japan. Extensive cooperative development is anticipated.

The IJEP is composed of five subprograms: railway, infrastructure, innovation, technology management, and information science programs. These subprograms cover almost all the fields in engineering. Students involved in the IJEP program, in addition to completing courses and accomplishing research at the host university, can establish personal contacts and networks between India and Japan through valuable experiences such as field work and internships in both countries.









ndia and Japan agreed to introduce Japan's bullet train (shinkansen) technology to India in December 2015.

Renowned for its safety record, efficiency, and comfort, the shinkansen will open up a new dimension for economic transformation of India. Our Railway Engineering Education program gives aspiring engineers a chance to be a part of this transformation. In collaboration with IIT Kharagpur and its Centre for Railway Research, we offer lectures and workshops on high speed rail

technologies, including vehicle dynamics, electric devices, train operation, railway bridges, and new materials. In December 2014, students and faculty members from the University of Tokyo participated in the winter term program on high speed rail held at IIT Kharagpur, which was coordinated by Professor Subhransu Roy and Professor Arghya Deb. More seminars and workshops are expected in the future.



Takafumi Koseki Professor





Associate Professor



Takeshi Mizuma



Kimihiko Nakano Subhransu Roy Professor, IIT-KGP Associate Professor

Social Infrastructure Education Program

n this program, the School of Engineering will cooperate with the Indian Institute of Technology Delhi (IIT-D) and the Indian Institute of Technology Kanpur (IIT-K) to focus on infrastructure maintenance with a neoclassical growth model, which will be applied to India, a developing country. The process will generally focus on the later stages of the lifespans of infrastructure, with specific, primary concerns being maintenance, rehabilitation, and replacement.

implemented with the aim of preserving and extending the service life of long-term infrastructure assets. Various academic programs have been scheduled to promote bilingual cooperation for students and researchers, which include intensive courses, joint thesis supervision, mediumterm intern study abroad programs, and joint research on social infrastructure systems.



Professor

These strategies will be organized and



Koichi Maekawa Professor



Assistant Professor



Shashank Bishnoi Assistant Professor, IIT-D



Tetsuya Ishida Professor



Sudhir Misra Professor, IIT-K







Lecturer

Komatsuzaki

Hideyuki Horii Professor

Uday B. Desai Professor, Director of IIT-H



The University of Tokyo's i.school has been working to foster innovative people who think outside the box, and therefore discover, enhance, and realize new value, allowing them to take active roles in pushing governments, business, and academics in Japan and in Asia. The i.school methodology gives University of Tokyo students and students at collaborating Indian institutes the chance to develop innovative skills and an innovative mindset.

and was collected from field surveys with middle-class Indian families. During the workshop, participants learned how to utilize analogies to create new ideas. This intensive group work produces innovative ideas through a collaborative effort between people with different backgrounds and nationalities, and is the experience of a lifetime.

An example of this includes the "Service Innovation in India" joint innovation workshop, which has been held in IIT Hyderabad since 2015. Students from both institutes created new ideas about service innovation in India in the future. Their data was real,

Innovation Education Program

The program begins with development of case studies on high-tech Japanese firms investing in India. These case studies aim to help provide a better understanding of the issues related to international technology management strategies. An example includes Nissan Motors, which made a substantial investment to RNTBC (Renault Nissan Technology Business Center) in Chennai.

The pharmaceutical industry will also be investigated, especially section 3(d) of the Indian Patent Law and its impacts on multinational R&D in India.

These case studies will be used in our educational programs in courses such as "Global Business Strategy and Policy," offered by the University of Tokyo, and

Technology Management Education Program



Chirantan

Chatterjee

Assistant Professor, IIM-B



Kazuyuki Motohashi Professor **Prakash Sai L.** Professor , IIT-M "The Rise of Asian Economies," offered by the Indian Institute of Management, Bangalore. Additionally, courses offered by the Indian Institute of Technology, Madras, are open for University of Tokyo students to attend, thus providing an opportunity for Indian and Japanese students to expand their international scope. In return, students from IIT-M and IIM-B will be invited to Japan to work together with Japanese students.

A major project which the Graduate School of Information Science and Technology is involved is in a smart building project at IIT Hyderabad (IIT-H). Smart building is an approach to intelligent building management using information and communication technology. The project contributes to the sustainable development of the city and the university campus, especially





Hiroshi Esaki Professor



Zafar Khan Associate Professor & Head of the Department, IIT-H



Information Science and Technology Education Program

in terms of energy management. The Green University of Tokyo Project (GUTP) has developed both hardware and software to support smart buildings. These technologies are in use at the University of Tokyo. Integration of such technologies (and a smart campus project) at IIT-H is in progress.



Reiji Suda Professor



Manabu Tsukada Project Assistant Professor



Hideya Ochiai Lecturer



Kiran Kuchi Associate Professor, IIT-H



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About IJEP

he IJEP aims to educate talented students who will be at the forefront of entrepreneurship, innovation, globalization, and technical advancement in collaboration with educational institutions, industries, and governments both in India and Japan. We seek to develop in students the ability to develop groundbreaking products and to act globally, with innovating ideas and entrepreneurial spirit.

IJEP's mission is to develop creative global leaders in industries, public services, and research institutions who

Undergraduate, graduate, faculty members and ecutive trainees from collaborating compa

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IIT-Delhi UTokyo India Office

IIT-Kanpur

Intensive courses, remote teaching >Joint short-term (3 months) program -Internships Degree program

IIT-Kharagpur

IIT-Hyderabad

IIT-Madras

IIT-Bombay

Collaborating Companies (Field research, Internships) Infosys, Indian Railways, Delhi Metro, auto, IT, pharmaceutical companies

IIM-Bangalore

Collaborating Companies (Scholarships, Internships) DMG Mori Co., Ltd.

The University of

Tokyo

are capable of facing challenges with

deep insights and an understanding of

human beings and society, regardless

of culture and history, without holding

on to conventional rules or standards.

Daiwa Securities Co.Ltd. Japan Railway Companies Railway Technical Research Institute, etc.

Undergraduate, graduate, faculty members and executive trainees from collaborating companies.

UTokyo

India

Office

Alumni

Assoc.

of India

IJEP Internship Program

T he IJEP Internship Program, organized by the School of Information Science and Technology, students from collaborating partner

EP



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