

AY 2027 Dual Doctoral Degree Program with the Indian Institute of Technology, Bombay
Guidelines for Recommending Candidates

1. Program Outline

Under the Dual Doctoral Degree Program (DDDP) Tohoku University (TU) and the Indian Institute of Technology Bombay (IITB) jointly advise doctoral students. Applications are currently open for the DDDP, with research at IITB scheduled to begin in July 2027. Students participating in this program are advised by instructors from both universities and engage in joint research projects. Those who fulfill the doctoral graduation requirements of both IITB and TU receive doctoral degrees from both universities.

Cooperation with the Faculty Lead (FL) assigned to the relevant research area is mandatory when applying to this program. FLs will support students wishing to participate in the DDDP (hereinafter referred to as "the students") by collaborating with the students' academic advisors at TU and their counterparts in the relevant research fields at IITB to help identify host laboratories and prospective academic advisors at IITB.

2. Application Qualifications and Requirements

- Eligibility

First-year students enrolled in a TU doctoral curriculum who are performing research in any of the below areas are eligible.

*In general, students must apply for the DDDP during the first year of enrollment in the doctoral curriculum.

- Eligible Research Areas

- Digital Health
- Disaster Mitigation
- Robotics
- Transportation
- AI and Machine Learning
- Energy and Sustainability
- Materials Science
- Quantum Computing
- Semiconductors
- Thermals and Fluids

*For information on FLs in each research field, please refer to Appendix 1, "List of Tohoku University Faculty Leads."

- Period of Study Abroad

Participants will spend one to two years (minimum of one year) conducting research at IITB.

* The period of stay at IITB will be determined in consultation with the students' academic advisors at TU and IITB.

- Language Proficiency

As research, dissertation writing, examinations, formal reports, etc. at IITB will be conducted in English, participants must have English proficiency sufficient to carry out these tasks.

*Depending on their English ability, students may be required to enroll in an English proficiency course offered by IITB.

3. Process from Application to Program Participation

Please refer to Appendix 2, "IITB-Tohoku Dual Doctoral Degree Program (DDDP): from Application to Program Participation" for an outline of the application and selection process.

4. Application Materials/Procedures

Please submit the below application materials and complete the required procedures by the designated deadlines.

1) DDDP Participation Application Form

- Please instruct students who wish to participate in DDDP to obtain permission from their academic advisors and FLs, then complete [the online form](#).
- Deadline: 12:00 PM, September 11, 2026

*It is fine for the academic advisor at TU to contact the prospective academic advisor at IITB to inquire about hosting the student prior to the submission of the Participation Application Form.

*After the Participation Application Form is submitted, the prospective academic advisor at IITB will be identified under IITB's coordination.

*An online interview with the student, TU academic advisors, and IITB faculty members may be conducted during the process of identifying the prospective academic advisor at IITB.

2) **Form A:** Application for Dual Doctoral Degree Program & **Form B:** Co-supervision Agreement for Dual Ph.D. Degree

- If provisional consent is given by the prospective IITB advisor, the student's graduate school should upload Form A (prepared by the student) and Form B (prepared by the relevant university faculty/staff) in PDF format to the Google Drive folder as described in section 4) below.
- Deadline: 12:00 PM, October 16, 2026

3) Application Documents

- We ask each graduate school to upload the below set of documents in PDF format to the appropriate Google Drive folder as described in section 4) below.
- Deadline: 12:00 PM, January 25, 2027
 - ① Copies of Forms A and B
Form B should be signed by the prospective IITB advisor before submission.
 - ② Curriculum Vitae (CV)
 - ③ Reason for Academic Advisor Selection
Statement of reason for choosing the specific IITB instructor as an academic advisor (A4, 1 page maximum)
 - ④ Statement of Purpose
Description of goals for participating in DDDP (A4, 1 page maximum)
 - ⑤ Research Proposal
Outline of research at IITB (A4, 1 page maximum)
 - ⑥ Letters of Recommendation (2 letters)
One letter should be from the student's current academic advisor; the other should be from another TU professor.
 - ⑦ Transcript of Grades
Include grade transcripts from both undergraduate and master's curricula.
 - ⑧ Proof of Language Proficiency
Provide score from TOEFL/IELTS etc., or formal certificate of English proficiency.
 - ⑨ Copy of Academic Degree Certificate
Provide copies for both Bachelor and Master's degrees.
 - ⑩ Copy of Passport (photo page)
 - ⑪ Program Agreement
The form will be provided by TU (Japanese).

*In addition to submitting the above documents, applicants may be required to input information into a Google Form to be specified by IITB at a later date.

4) Application Submission Folders

	Graduate School/Folder	Department/Account with Access Permission
1.	Graduate School of Science	sci-sien@grp.tohoku.ac.jp
2	Graduate School of Pharmaceutical Sciences	pharm-kyom@grp.tohoku.ac.jp
3	Graduate School of Engineering	eng-in@grp.tohoku.ac.jp
4	Graduate School of Agricultural Science	agr-kyom@grp.tohoku.ac.jp

5	Graduate School of Information Sciences	is-kyom@grp.tohoku.ac.jp
6	Graduate School of Life Sciences	lif-kyom@grp.tohoku.ac.jp
7	Graduate School of Environmental Studies	kankyo.kyomu@grp.tohoku.ac.jp
8	Graduate School of Biomedical Engineering	bme-kyom@grp.tohoku.ac.jp

5. Fees/Scholarships

- Tuition Fee

In accordance with the agreement concerning DDDP between IITB and TU, students will pay fees to TU only. IITB tuition fees will be waived. However, students may have to pay facility usage fees etc. to IITB.

- Stipend

IITB is scheduled to provide Tohoku students with a monthly stipend of 37,000 INR to 42,000 INR during their stay at IITB.

[Estimated Monthly Living Expenses at IITB]

Dormitory fees, meal expense at the dormitory, administrative charges, etc.:
approximately 20,000 INR

* For information regarding other scholarships, contact the address under “Inquiries”.

- Housing/Travel Expenses

Students must pay travel, living, insurance etc. expenses themselves. However, while at IITB, just like other IITB students, they may be eligible for aid for expenses related to living, medical facility usage, academic conferences, etc.

- Overseas Travel Insurance

In order to study at IITB, participants must enroll in Supplemental Study Abroad Insurance under their Personal Accident Insurance for Students Pursuing Education and Research; it must cover the entire period from departure until return to Japan.

6. Other

- Prior to considering participation in the DDDP, advise students to confirm that there are no entry restrictions to India and that they are able to travel there, including being able to obtain the specific type of visa designated by IITB.
- The student is solely responsible for all matters related to applying and traveling abroad.
- Admission to this program may be rescinded due to health concerns or failure to comply with the terms of the Program Agreement. In addition, the program may be suspended/canceled due to adverse circumstances, such as disease outbreaks etc.

7. Inquiries

Education and Student Support Department

Student Exchange Division, Global Programs Section

Extension: 92-7820

Email: sab_query@grp.tohoku.ac.jp

東北大学ファカルティリード教員一覧/List of Tohoku University Faculty Leads

As of February 17, 2026

Sl.	Identified Research Domains	Faculty Champions	Email ID	Link to TU Reserchers website	Department
1	Digital Health	Prof. Yoshikazu Tanaka	yoshikazu.tanaka.e8@tohoku.ac.jp	https://www.lifesci.tohoku.ac.jp/en/research/teacher/detail---id-45495.html	<u>Graduate School of Life Sciences</u>
2	Disaster mitigations	Prof. Daisuke Komori	daisuke.komori.e8@tohoku.ac.jp	https://www.r-info.tohoku.ac.jp/en/7ae7c1f534b5455fa823211da744a76d.html	Green Goals Initiative
3	Robotics	Prof. Yasuhisa Hirata	yasuhisa.hirata.b1@tohoku.ac.jp	https://www.r-info.tohoku.ac.jp/en/a3cee6d57c95f29922276f8397b81ac5.html#container_research_projects	<u>Graduate School of Engineering</u>
4	Transportation	Prof. Tatsuhito Kono	kono@tohoku.ac.jp	https://www.r-info.tohoku.ac.jp/en/5fd366834ad6aa9dbb002d5d86943790.html	<u>Graduate School of Information Sciences</u>
5	AI & Machine Learning	Prof. Hiroaki Kobayashi	koba@tohoku.ac.jp hiroaki.kobayashi.d5@tohoku.ac.jp	https://www.r-info.tohoku.ac.jp/en/fe79c31b8d2e7e5a7a39fe3e4d2b7093.html	<u>Graduate School of Information Sciences</u>
6	Energy & Sustainability	Prof. Toshiaki Yoshioka	yoshioka@tohoku.ac.jp	https://www.r-info.tohoku.ac.jp/en/4c2977b35e787c768ac9aae5e31b5c6b.html	<u>Graduate School of Environmental Studies</u>
7	Materials Science	1) Prof. Hitoshi Takamura	hitoshi.takamura.a8@tohoku.ac.jp	https://www.r-info.tohoku.ac.jp/en/256d22da14d1e59e69df5f9043122b3a.html	<u>Graduate School of Engineering</u>
		2) Prof. Takafumi Sato	t-sato@arpes.phys.tohoku.ac.jp	https://www.r-info.tohoku.ac.jp/en/8ddf5e786b5f6fd891ed7a1733945ab3.html	<u>Advanced Institute for Materials Research</u>
8	Quantum Computing	Prof. Taro Yamashita	taro.yamashita.c8@tohoku.ac.jp	https://www.r-info.tohoku.ac.jp/en/4e6b86f65586dbe183c0ee10e16c25bf.html	<u>Graduate School of Engineering</u>
9	Semiconductor	1) Prof. Shuji Tanaka	shuji.tanaka.b5@tohoku.ac.jp mems@tohoku.ac.jp	https://www.r-info.tohoku.ac.jp/en/4c41913910306bb04128ec2c2d75eaa4.html	<u>Graduate School of Engineering</u>
		2) Prof. Tetsu Tanaka	tetsu.tanaka.d5@tohoku.ac.jp	https://www.r-info.tohoku.ac.jp/en/0b0a0c07a6a701388f750f1b2d2ffe0b.html	<u>Graduate School of Biomedical Engineering</u>
10	Thermals and Fluids	Prof. Kaoru Maruta	kaoru.maruta@tohoku.ac.jp	https://www.r-info.tohoku.ac.jp/en/285a27030f3fd3c948f5f645ee645d4b.html	<u>Institute of Fluid Science</u>

IITB-Tohoku Dual Doctoral Degree Program (DDDP): from Application to Program Participation

Period	Description
July/August	[DDDP Participation Discussion/Application Form] - Students must consult with their academic advisors at TU to discuss participation in the DDDP, their research plans at IITB, and their preferred candidate advisors. In addition, the TU academic advisors will contact the TU FL (Faculty Lead) in the student's research field. - As a general rule, candidate advisors at IITB should be selected from Appendix 3, "Main DDDP Faculty List." At this stage, it is fine for the academic advisor at Tohoku University to contact the candidate advisor at IITB to informally sound them out about hosting the student. When doing so, please refer to Appendix 1, "Tohoku University Faculty Lead List" and cc the FL in the relevant research field to ensure they are aware of the situation. - After the student receives permission to apply to DDDP from their advisor and FL at TU, they should apply via the online form. [Deadline: Friday, September 11, Noon]
September/October	[Prospective IITB Advisor Matching] Based on the information entered by the student in the online form, IITB will provide support in identifying (matching) prospective academic advisors. *The student, TU advisor, prospective IITB advisor, and FLs at both universities should thoroughly confirm the details of TU's and IITB's curricula, the length of stay abroad, research plan, credit acquisition schedule, and doctoral requirements, before considering participation in DDDP.
October	[Application Form Submission] If provisional consent is given by the prospective IITB advisor, the student should prepare Form A. At this time, the student's TU advisor should also complete and sign the relevant portions of Form B. The relevant department of the student's graduate school will then collect Forms A and B, obtain the Dean's signature on Form B, and submit the forms to the designated folder. [Deadline: Friday, October 16, Noon]
October	[Submission of Application Forms] (Student Exchange Division) After Form B is submitted by the Graduate School and signed by the TU representative, the TU Student Exchange Division will submit Form A and Form B to IITB.
October	[Receipt of Partial Form] The prospective academic advisor at IITB will sign Form B and send it to the TU Student Exchange Division, which will send it on to the responsible office of the student's Graduate School.

October-January	[Internal Screening] Students will prepare their materials as per "4. Application Materials" in the application guidelines. Based on these materials, the student's graduate school will conduct screenings and submit the application materials of the relevant candidates to the designated folder. [Deadline: Monday, January 25, Noon]
February or later	[Final Screening] IITB will hold screenings to approve/reject candidates. Note: Online interviews may be conducted with the students and their academic advisors at TU.
March or later	[Research Planning and Travel Preparation] Students will consult with their academic advisors at IITB to develop their research plans and prepare for their travel to India.
July or later	[Study and Research at IITB] Students will stay at IITB to engage in study and research (typically 1 to 2 years, with a minimum of 1 year). <i>Note: The duration of the stay at IITB will be determined through consultation with academic advisors from both TU and IITB.</i>

*The timing and details may change as a result of coordination with IITB.

主なDDDP参画教員一覧/Main DDDP Faculty List

#	Name	Department/Centre/School	Email Address	Domain	Please provide details about any research group, laboratory, or professor at Tohoku University you would like to work with	Topic of PhD Research
1	Biplab Banerjee	CSRE	bbanerjee@iitb.ac.in	AI & ML	Any group focusing on computer vision and advanced AI	Representation learning for multi-modal remote sensing data (tentative)
2	Pennan Chinnasamy	C-TARA	p.chinnasamy@iitb.ac.in	AI & ML	Atsushi Iizuka ; Tomoaki Satomi; Nobuo Hirano	Planning using Geospatial tools for sustainable development
3	Virendra Singh	CSE & EE	viren@cse.iitb.ac.in	AI & ML	Exploring	AI Accelerators
4	Virendra Singh	CSE & EE	viren@cse.iitb.ac.in	AI & ML	Exploring	AI powered new generation networks
5	Rashmi Gupta	HSS	r.gupta@iitb.ac.in	Digital Health	We have spoken to Prof. Ayahito Ito; (Email: ayahito.ito@gmail.com). He is intreated to take part in July 2026 round. I would like to explore more faculties in the area of cognitive science and cognitive neuroscience to float more projects.	Interaction between cognition and emotion, mindfulness, digital health
6	Nirmal Punjabi	KCDH	npunjabi@iitb.ac.in	Digital Health	For my students, I would like to interact with the following group: Prof. Takafumi Aoki, Prof. Koichi Ito, Prof. Takayuki Okatani	Standardization and device characterization for reliable mHealth based mass-screening in resource limited settings
7	Prof. Anirban Sarkar	Electrical Engineering	anirban@ee.iitb.ac.in	Digital Health	Prof. Kazushi Ishiyama from Electromagnetic Bioinformation Engineering, Prof. Taichi Goto from Electromagnetic Bioinformation Materials,	Tentative topic: Smart Electromagnetic IoT-enabled Sensing system and RF Imaging for Biomedical Applications
8	Sandeep Kumar Kalva	BSBE	sandeep.kalva@iitb.ac.in	Digital Health		Optoacoustic imaging
9	Sandip Kaledhonkar	Biosciences and Bioengineering	sandipk@iitb.ac.in	Digital Health		Ultrastructure determination by employing cryoEM
10	Nirmal Punjabi	KCDH	npunjabi@iitb.ac.in	Digital Health	Matsuhiko Nishizawa; Shuto Osaki; Yoichi Haga	Sensors for continuous Amino acid monitoring from sweat for physiological state tracking
11	Srineash V K	Civil Engineering	srineash@iitb.ac.in	Disaster mitigations	International Research Institute of Disaster Science	Offshore Wind Turbines
12	Prof. Manasa R Behera	Civil Engineering	manasa.rb@iitb.ac.in	Disaster mitigations	Tsunami Engineering Lab, Professor IMAMURA Fumihiko	Extereme ocean event impact on annual to decadal scale beach profile evolution
13	Prof Gulab Singh	CSRE	gulab.singh@csre.iitb.ac.in	Disaster mitigations	Prof Shunichi Koshimura, Deputy Director, International Research Institute of Disaster Science (IRIDeS)	Disaster Mitigation by Radar Technologies
14	Trupti Mishra	SJMSOM	truptimishra@iitb.ac.in	Disaster mitigations	International Reserach Institute of Disaster Science, Professors Takako Izumi and Osamu Murao and EBINA Yuichi	Disaster Risk, Resilience and economics
15	Pramod Kumar	Physics	pramod_k@iitb.ac.in	Energy & Sustainability		2D transistor and physics of charge carrier transport
16	Pavan Kumar Hari	Energy Science and Engineering	pavanhari@iitb.ac.in	Energy & Sustainability	One of the following - (i) Prof. Toshihiko Nakata, Graduate School of Engineering (ii) Prof. Kazuyo Mastubae, Graduate School of Environmental Studies (iii) Prof. Jeongsoo Yu, Graduate School of International Cultural Studies (iv) Prof. Kazuaki Okubo - Graduate School of International Cultural Studies, (v) Prof. Tetsuya Nagasaka, Gradudate School of Engineering	Hybrid Electric Vehicles - Energy Management and Sustainability
17	Asish K Sarangi	DESE	asish.sarangi@iitb.ac.in	Energy & Sustainability	Maruta & Morii Lab	
18	Dinesh Kabra	Physics	dkabra@phy.iitb.ac.in	Energy & Sustainability	Research group working on Solar cells : silicon or perovskite semiconductors.	Scaling up perovskite solar cell technology
19	Zakir Rather	DESE	zakir.rather@iitb.ac.in	Energy & Sustainability	https://www.es.e.iitb.ac.in/~gil/	https://www.es.e.iitb.ac.in/~gil/research-areas/
20	Nagappan Ramaswamy	Chemical Engineering	nagappan@iitb.ac.in	Energy & Sustainability	Kazuhisa SATO	
21	Prof Munish Chandel	Environmental Science and Engineering	munish.chandel@iitb.ac.in	Energy & Sustainability		
22	Prof Munish Chandel	Environmental Science and Engineering	munish.chandel@iitb.ac.in	Energy & Sustainability	Takatoshi Ito (Professor), Tomoyuki Fujii (Professor), Hiroshi Takahashi (Specially Appointed Professor(Research))	
23	Amit Arora	C-TARA	aarora@iitb.ac.in	Energy & Sustainability	Environmental and Energy Economics Faculty- Prof. Kazuyo Matsubae, Prof. Takeshi Komal, Assist. Prof. Zhang	
24	Ojus Mohan	Chemical Engineering	ojus@iitb.ac.in	Energy & Sustainability	I am interested in collaborating with experimental groups at Tohoku University working in heterogeneous catalysis ² , particularly those focusing on sustainable catalytic reactions such as CO conversion, biomass valorization, and related energy-relevant processes. My research group specializes in computational catalysis, primarily using density functional theory (DFT), complemented by microkinetic modeling and data-driven approaches, to understand reaction mechanisms, identify active sites, and screen catalytic materials. I am keen to work with laboratories that have strong capabilities in catalyst synthesis, characterization, and catalytic testing, so that computational predictions can be validated experimentally and used to guide catalyst design.	

#	Name	Department/Centre/School	Email Address	Domain	Please provide details about any research group, laboratory, or professor at Tohoku University you would like to work with	Topic of PhD Research
25	Abhijit Chatterjee	Chemical Engineering	achatter@iitb.ac.in	Energy & Sustainability	I will like to know more about potential collaborators	Keywords: Energy, catalysis, fuel cells, batteries, CO2 conversion
26	Karthikeyan Hariharan	Metallurgical Engineering and Materials Science		Materials Science	Prof. Xiang-Yu Zhong - he works on stress corrosion cracking and corroison of metals	Stress corrosion cracking, High temperature corrosion, Ni-based superalloys
27	Ankit Jain	Mechanical Engineering	a_jain@iitb.ac.in	Materials Science	Prof. Hao Li. [https://www.li-lab-cat-design.com/]	ATomistic Simulations and AI/ML for materials discovery
28	Soham Mujumdar	Mechanical Engineering	sohammujumdar@iitb.ac.in	Materials Science	We work in advanced manufacturing. Specifically, in micro/nano manufacturing, surface engineering and additive manufacturing. We would like to explore collaboration in materials and manufacturing domain related to these areas.	We work in advanced manufacturing. Specifically, in micro/nano manufacturing, surface engineering and additive manufacturing. We would like to explore collaboration in materials and manufacturing domain related to these areas.
29	Aftab Alam	Physics	aftab@iitb.ac.in	Materials Science	Takashi Koretsune, Shunsuke Sato, Yoichi Ikeda	Quantum Magnetism, Topological Insulators, Thermoelectrics
30	Kamendra P. Sharma	Chemistry	k.sharma@chem.iitb.ac.in	Materials Science	Soft Matter Group having Profs. Masayuki Imai, Yuka Sakuma and Minoru Korisu	Minimal Synthetic Compartments: Membranisation and Incorporating Chemical Complexity
31	Amartya Mukhopadhyay	Metallurgical Engineering and Materials Science	amartya_mukhopadhyay@iitb.ac.in	Materials Science	There are battery research related groups; need to spend a little more time to figure out a potential collaborator; the as-planned student's visit is likely to help further	Layered transition metal oxide cathodes for alkali metal ion batteries
32	Sanjog Nagarkar	Chemistry	nagarkarss@iitb.ac.in	Materials Science	Kouki OKA Associate Professor, Institute of Multidisciplinary Research for Advanced Materials, Tohoku University	Framework Materials for clean energy and environmental applications
33	Sunita Srivastava	Physics	sunita.srivastava@iitb.ac.in	Materials Science	I am interested in collaboration with experimental soft matter group.	Self-assembly in colloidal system
34	Vishwas Bhargava	CSE	vishwas@cse.iitb.ac.in	Quantum Computing	Algorithm Theory group, Prof. Xiao Zhou, Prof. Akira Suzuki, Prof. Yuma Tamura	Theoretical computer science, Algebraic Complexity, Quantum Computing
35	Virendra Singh	CSE & EE	viren@cse.iitb.ac.in	Quantum Computing	Exploring	Quantum Key Distribution and Quantum Cryptography
36	Anirban Guha	Mechanical Engineering	anirbanguha@iitb.ac.in	Robotics	Not been able to identify yet.	Collaborative and modular robots
37	Priyanshu Agarwal	Mechanical Engineering	pagarwal@iitb.ac.in	Robotics	Jose Victorio Salazar Lucas, Takeshi Okuyama, TAKAHASHI Akifumi, Kimitoshi Yamazaki, Mitsuhiro Hayashibe	Design, Development and Control of a Personalized Prosthetic Hand with Integrated Tactile Sensing, Design, Fabrication, and Control of an Intelligent Assistive Sleeve, Design, Fabrication, and Control of a Textile-Based Assistive Glove for Hand Rehabilitation
38	Darshan S. Shah	Mechanical Engineering	d.shah@iitb.ac.in	Robotics	Faculty, labs or groups working in medical/biomedical robotics	In vitro physiological joint simulators
39	Pramod Kumar	Physics	pramod_k@iitb.ac.in	Semiconductor	Interested in working on 2D materials transistors and sensors	Organic semiconductor based transistors and sensors
40	Rajesh Zele	Electrical Engineering	rajeshzele@ee.iitb.ac.in	Semiconductor	Integrated Circuit Design for RF Analog Mixed Signal applications	Advance IC design for RF applications
41	Rahul Singh	Electrical Engineering Center for Semiconductor Technologies	rahuls@ee.iitb.ac.in	Semiconductor	Prof. Noriharu Suematsu (Research Institute of Electrical Communication)	Cryo-CMOS Readout Electronics for Silicon Spin Qubits
42	Virendra Singh	CSE & EE	viren@ee.iitb.ac.in	Semiconductor	Exploring	Formal Verification of AI based systems
43	Sandip Kumar Saha	Mechanical Engineering	sandip.saha@iitb.ac.in	Thermals and Fluids		Experimental and numerical study of Hydrated Salt mixtures for thermochemical energy storage
44	Abhijeet Kumar	Mechanical Engineering	abhijeet.kumar@iitb.ac.in	Thermals and Fluids	Institute of Fluid Science	
45	Neeraj Kumbhakarna	Mechanical Engineering	neeraj_k@iitb.ac.in	Thermals and Fluids	Prof. Hisashi Nakamura	Modeling hypersonic combustion in liquid propeller using ab-initio methods
46	Sangram Krishna Nirmale	Civil Engineering	sangramnirmale@iitb.ac.in	Transportation	Prof. KONO Tatsunori (website: https://tohoku.elsevierpure.com/en/persons/tatsunori-kono/) Lab: Regional and Urban Planning (Website: https://www.is.tohoku.ac.jp/en/laboratory/list_dept/c12.html) in the Transportation and Urban Planning Section at the Department of Civil and Environmental Engineering	
47	Gopal R. Patil	Civil Engineering	gpatil@iitb.ac.in	Transportation		Transportation systems planning, freight transportation