Tokyo Tech Course Information to Help Develop Your Study Plan

a. Master's and doctoral students can take numerous courses offered at the graduate level.
b. Undergraduate students in YSEP or undergraduate students **in their final year** in ACAP can take courses for undergraduates (almost all of which are conducted in Japanese) and courses for graduates open to exchange students (conducted in English). Please note that a list of courses will be updated approximately two weeks before the start of each semester. Courses listed in previous years will not necessarily be offered in the following year.
c. Undergraduate students other than those in their final year in ACAP can take only undergraduate courses mostly conducted in Japanese. Considering that students will be taking university-level courses conducted in Japanese, we expect them to have a language proficiency equivalent to JLPT N1.
d. Students may take Japanese language courses at any level and are not allowed to take language classes other than Japanese.

Notes:

1) Course Numbers and Indicated Levels; 100-level, 200-level, 300-level: Undergraduate Level / 400-level, 500-level: Master's Level / 600-level: PhD Level
2) Any courses conducted in English in the 100 and 200 levels cannot be taken.
3) Before applying to our programs, be sure to carefully check the below URL on the latest information regarding course timetables and syllabi, and the list of courses after the second page from the previous year which details available graduate courses conducted in English, and confirm that your study plan matches course availability.
4) There may be cases where your request for course registration is not permitted, as some courses have specific requirements for registration. In addition, some of the courses involving exercises/research training are not open to international exchange students.
5) There are not many 300-level courses available in English. If you are an undergraduate student not in the final year in ACAP and wish to take courses in English because of your Japanese proficiency, please carefully draw up a study plan in advance that will allow you to complete the program despite only taking 300-level courses taught in English.

Reference:

- Graduate Timetables - 2023 Spring and Fall Semester (1st to 4th Quarter)
  https://www.titech.ac.jp/english/student/students/life/graduate-timetables
- Undergraduate Timetables - 2023 Spring and Fall Semester (1st to 4th Quarter)
  https://www.titech.ac.jp/english/student/students/life/undergraduate-timetables
- Tokyo Tech OCW (Syllabi)
  http://www.ocw.titech.ac.jp/index.php?lang=EN
- List of Graduate Courses available to Final year Undergraduate-level International Exchange Students

  Please see the second and subsequent pages.

List of Graduate Courses Available to Undergraduate-level International Exchange Students <For 1Q, 2Q of the 2023-2024 Academic Year>

Eligibility for Acceptance

・Students must be final year undergraduates or at an equivalent level.
・Students must meet the specific criteria for each course defined by the instructor and indicated in the final column of the table.
・Students must be enrolled on an appropriate exchange program that allows access to these courses.

As of March 2023

NOTE: TAKING ANY GRADUATE-LEVEL COURSE (400-LEVEL OR HIGHER) THAT IS NOT ON THIS LIST IS NOT PERMITTED UNDER ANY CIRCUMSTANCE. EVEN IF THE COURSE INSTRUCTOR INDIVIDUALLY APPROVES YOUR ENROLLMENT, YOUR REGISTRATION FOR SUCH A COURSE WILL BE REJECTED.

Major / Course Category	No.	Course Name	Lecturer	Quarter	Eligibility criteria or prerequisite knowledge, etc.
Graduate major in Mathematics	MTH.A405	Advanced topics in Algebra A1	Shimomoto Kazuma	1Q	Undergraduate-level knowledge of rings, modules and homomorphisms
Graduate major in Mathematics	MTH.A406	Advanced topics in Algebra B1	Shimomoto Kazuma	2Q	Undergraduate-level knowledge of rings, modules and homomorphisms
Graduate major in Mathematics	MTH.B405	Advanced topics in Geometry A1	Masai Hidetoshi	1Q	Undergraduate-level knowledge of Calculus and Linear Algebra
Graduate major in Mathematics	MTH.B406	Advanced topics in Geometry B1	Masai Hidetoshi	2Q	Undergraduate-level knowledge of Calculus, Linear Algebra, Group theory, Topology, and Geometry
Graduate major in Mathematics	MTH.C405	Advanced topics in Analysis A1	Koike Kai	1Q	Undergraduate-level knowledge of Fourier analysis, measure theory, functional analysis
Graduate major in Mathematics	MTH.C406	Advanced topics in Analysis B1	Koike Kai	2Q	Undergraduate-level knowledge of Fourier analysis, measure theory, functional analysis
Graduate major in Physics	PHY.L412	Fundamental Physics Experiments	Jinnouchi Osamu, Nakamura Takashi, Somiya Kentaro, Fujioka Hiroyuki	1Q	
Graduate major in Physics	PHY.F436	Advanced Particle Physics	Kuze Masahiro	2Q	
Graduate major in Physics	PHY.F437	Advanced Nuclear Physics	Sekiguchi Kimiko, Sekizawa Kazuyuki	2Q	
Graduate major in Physics	PHY.Q433	Field Theory I	Ito Katsushi	2Q	
Graduate major in Physics	PHY.F431	Cosmology	Suyama Teruaki	1Q	
Graduate major in Physics	PHY.F430	Hadron Physics	Jido Daisuke	1Q	
Graduate major in Physics	PHY.Q438	Quantum Mechanics of Many-Body Systems	Saito Susumu	1Q	
Graduate major in Physics	PHY.C441	Crystal Physics	Uchida Masaki	1Q	
Graduate major in Physics	PHY.C448	Light and Matter III	Notomi Masaya	2Q	
Graduate major in Physics	PHY.C439	Physics of Magnetic Materials	Satoh Takuya	2Q	
Graduate major in Physics	PHY.C442	Superfluidity	Okuma Satoshi	1Q	
Graduate major in Physics	PHY.C443	Superconductivity	Okuma Satoshi	2Q	
Graduate major in Earth and Planetary Sciences	EPS.A410	Advanced Earth and Space Sciences A	Nakamoto Taishi	1Q	
Graduate major in Earth and Planetary Sciences	EPS.A421	Advanced Earth and Space Sciences G	Ogawa Yasuo, Kanda Wataru	2Q	
Graduate major in Mechanical Engineering	MEC.C432	Structural Integrity Assessment	Mizutani Yoshihiro	1Q	
Graduate major in Mechanical Engineering	MEC.H431	Advanced Mechanical Elements	Iwatsuki Nobuyuki	1Q	Fundamentals of geometry
Graduate major in Mechanical Engineering	MEC.G431	Mechanical Processing	Tanaka Tomohisa, Hirata Atsushi	2Q	
Graduate major in Mechanical Engineering	MEC.C431	Mechanics of Composite Materials	Todoroki Akira	2Q	Mechanics of materials, Theory of Elasticity and Plasticity, Strength and fracture of materials
Graduate major in Systems and Control Engineering	SCE.I401	Advanced Course of Measurement and Signal Processing	Hara Seiichiro	1Q	
Graduate major in Systems and Control Engineering	SCE.M401	Numerical Analysis of Heat Transfer and Fluid Flow	Kosaka Hidenori	2Q	
Graduate major in Systems and Control Engineering	SCE.M402	Modeling of Bio-Systems I	Nakashima Motomu, Kurabayashi Daisuke, Miyazaki Yusuke	2Q	
Graduate major in Systems and Control Engineering	SCE.A404	Nonlinear Dynamics	Nakao Hiroya	2Q	
Graduate major in Systems and Control Engineering	SCE.C451	Optimal Control	Hatanaka Takeshi	1Q	
Graduate major in Systems and Control Engineering	SCE.I434	Robot Audition and Scene Analysis	Nakadai Kazuhiro	1Q	
Graduate major in Electrical and Electronic Engineering	EEE.C441	VLSI Technology I	Wakabayashi Hitoshi, Kakushima Kuniyuki	1Q	
Graduate major in Electrical and Electronic Engineering	EEE.D451	Bipolar Transistors and Compound Semiconductor Devices	Miyamoto Yasuyuki	1Q	Graduate-level knowledge of electronic devices, analog electronic circuits and semiconductor physics (Equivalent to 200s and 300s-level courses in those subjects at Tokyo Tech)
Graduate major in Electrical and Electronic Engineering	EEE.P451	Plasma Engineering	Akatsuka Hiroshi, Okino Akitoshi	1Q	
Graduate major in Electrical and Electronic Engineering	EEE.D431	Fundamentals of Light and Matter I	Kajikawa Kotaro, Iino Hiroaki, Ito Haruhiko	1Q	Completion of courses in quantum mechanics and electromagnetism is preferable.
Graduate major in Electrical and Electronic Engineering	EEE.D411	Semiconductor Physics	Yamada Akira	2Q	Basic knowledge of quantum mechanics and electronic properties of solids.
Graduate major in Electrical and Electronic Engineering	EEE.S451	Wireless Communication Engineering	Sakaguchi Kei, Tran Gia Khanh	2Q	The fundamentals on signal & systems are prerequisite.
Graduate major in Electrical and Electronic Engineering	EEE.D401	Fundamentals of Electronic Materials	Nakagawa Shigeki, Sugahara Satoshi	1Q	Basic knowledge of quantum mechanics and electronic properties of solids.
Graduate major in Electrical and Electronic Engineering	EEE.S401	Advanced Electromagnetic Waves	Hirokawa Jiro, Tomura Takashi	1Q	The undergraduate-level knowledge is required on electromagnetism and electromagnetic wave.

Graduate major in Electrical and Electronic Engineering	EEE.P412	Power electronics circuits and systems	Fujita Hideaki	2Q	It is required to understand the knowledge taught in the undergraduate power electronics course.
Graduate major in Information and Communications Engineering	ICT.C401	Modern Cryptography	Ogata Wakaha	1Q	Completion of courses of discrete mathematics and probability and statistics
Graduate major in Information and Communications Engineering	ICT.S407	Wireless Signal Processing	Fukawa Kazuhiko	2Q	Completion of courses in linear algebra, caluculus, probability and statistics
Graduate major in Information and Communications Engineering	ICT.A406	Human-Centric Information Systems I	Nakayama Minoru, Koike Yasuharu, Yamaguchi Masahiro, Nakamoto Takamichi, Kaneko Hirohiko, Obi Takashi, Hasegawa Shoichi	2Q	Sufficient basic academic skills in information and communications.
Graduate major in Information and Communications Engineering	ICT.H409	Optics in Information Processing	Yamaguchi Masahiro	2Q	Basic knowledge of calculus, linear algebra, probability and statistics and Fourier analysis.
Graduate major in Information and Communications Engineering	ICT.H411	Basic Sensation Informatics	Kaneko Hirohiko, Nagai Takehiro	2Q	Sufficient basic academic skills in information and communications.
Graduate major in Information and Communications Engineering	ICT.I427	Reconfigurable Computing	Nakahara Hiroki	2Q	Sufficient basic academic skills in information and communications.
Graduate major in Industrial Engineering and Economics	IEE.D431	Distribution and Marketing	Chung Su-Lin	1Q	
Graduate major in Industrial Engineering and Economics	IEE.C432	Cognitive Ergonomics	Aoki Hirotaka	2Q	No prerequisites.
Graduate major in Materials Science and Engineering	MAT.M401	Applied Diffraction Crystallography in Metals and Alloys	Fujii Toshiyuki	2Q	Students need knowledge of metallurgy equivalent to that of fourth-year undergraduates at Tokyo Tech and need to consult with the lecturer when attending this course first.
Graduate major in Materials Science and Engineering	MAT.M410	Deformation and Strength of Solids	Onaka Susumu, Terada Yoshihiro	2Q	Students need knowledge of metallurgy equivalent to that of fourth-year undergraduates at Tokyo Tech and need to consult with the lecturer when attending this course first.
Graduate major in Materials Science and Engineering	MAT.P401	Organic Optical Materials physics	Ishikawa Ken	2Q	Students need knowledge equivalent to the course content of MAT.P302 "Optics".
Graduate major in Materials Science and Engineering	MAT.M409	Thermodynamics for Phase Equilibria	Sone Masato, Chang Tso-Fu	1Q	Students need knowledge of metallurgy equivalent to that of fourth-year undergraduates at Tokyo Tech and need to consult with the lecturer when attending this course first.
Graduate major in Materials Science and Engineering	MAT.C402	Quantum Physics in Optical Response of Materials	Nakamura Kazutaka	2Q	Students need knowledge of quantum mechanics equivalent to that of fourth-year undergraduates at Tokyo Tech and need to consult with the lecturer when attending this course first.
Graduate major in Materials Science and Engineering	MAT.P416	Soft Materials Chemistry	Sagara Yoshimitsu	2Q	Students need knowledge of organic chemistry equivalent to that of fourth-year undergraduates.
Graduate major in Materials Science and Engineering	MAT.M433	Advanced Microstructure Design of Non-ferrous Materials A	Kobayashi Equo	2Q	Students need knowledge of metallurgy equivalent to that of fourth-year undergraduates at Tokyo Tech and need to consult with the lecturer when attending this course first.
Graduate major in Materials Science and Engineering	MAT.M434	Advanced Microstructure Design of Non-ferrous Materials B	Muraishi Shinji	2Q	Students need knowledge of metallurgy equivalent to that of fourth-year undergraduates at Tokyo Tech and need to consult with the lecturer when attending this course first.
Graduate major in Materials Science and Engineering	MAT.P407	Catalysis and Electrocatalysis	Nabae Yuta	2Q	Students need knowledge of electrochemistry equivalent to that of fourth-year undergraduates.
Graduate major in Chemical Science and Engineering	CAP.A461	Advanced Solid State Chemistry I	Ohtomo Akira	1Q	Knowledge of fundamental solid-state chemistry is needed.
Graduate major in Chemical Science and Engineering	CAP.C423	Computational Fluid Dynamics	Okawara Shinichi	2Q	Fundamental knowledge of fluid dynamics and transport phenomena is needed.
Graduate major in Chemical Science and Engineering	CAP.C421	Advanced Energy Transfer Operation	Sekiguchi Hidetoshi	2Q	Knowledge of fundamental chemical engineering is desireble.
Graduate major in Chemical Science and Engineering	CAP.C412	Process Systems Engineering	Matsumoto Hideyuki	1Q	Knowledge of fundamental chemical engineering is desireble.
Graduate major in Chemical Science and Engineering	CAP.I420	Advanced Supramolecular Science	Fukushima Takanori, Yoshizawa Michito	2Q	Fundamental knowledge on organic chemistry, inorganic chemistry, physical chemistry
Graduate major in Chemical Science and Engineering	CAP.I407	Introduction to Chemical Engineering (Basics)	Yamaguchi Takeo	1Q	
Graduate major in Chemical Science and Engineering	CAP.C424	Advanced Reaction Process Engineering	Tago Teruoki	2Q	Knowledge of fundamental chemical engineering is desireble.
Graduate major in Chemical Science and Engineering	CAP.I419	Analytical Techniques for Environmental Chemistry	Toyoda Sakae, Yamada Keita	2Q	Fundamental knowledge of general chemistry is desired.
Graduate major in Chemical Science and Engineering	CAP.I405	Environmental Chemistry	Toyoda Sakae, Yamada Keita	1Q	Fundamental knowledge of general chemistry is desired.
Graduate major in Chemical Science and Engineering	CAP.I426	Introduction to Polymer Science	Tomita Ikuyoshi, Imaoka Takane	1Q	
Graduate major in Chemical Science and Engineering	CAP.I427	Introduction to Polymer Chemistry	Tomita Ikuyoshi, Yamamoto Kimihisa, Kubo Shoichi	2Q	
Graduate major in Chemical Science and Engineering	CAP.P422	Advanced Polymer Properties	Tokita Masatoshi	2Q	Knowledge of fundamental polymer chemistry and physics is required.
Graduate major in Chemical Science and Engineering	CAP.C425	Advanced Bioprocess Engineering	Okochi Mina, Tanaka Masayoshi	2Q	Knowledge of fundamental chemical engineering is desireble.
Graduate major in Chemical Science and Engineering	CAP.A425	Advanced Biofunctional Chemistry I	Tanaka Katsunori	1Q	Knowledge of synthetic and bioorganic chemistry is required.
Graduate major in Chemical Science and Engineering	CAP.A426	Advanced Biofunctional Chemistry II	Tanaka Katsunori	2Q	Knowledge of synthetic and bioorganic chemistry is required.
Graduate major in Mathematical and Computing Science	MCS.T418	Practical Parallel Computing	Endo Toshio	1Q	
Graduate major in Mathematical and Computing Science	MCS.T403	Statistical Learning Theory	Watanabe Sumio	2Q	
Graduate major in Mathematical and Computing Science	MCS.T401	Analysis on Continuous Systems	Nishibata Shinya, Miura Hideyuki, Umehara Masaaki, Murofushi Toshiaki, Suzuki Sakie	1Q	
Graduate major in Computer Science	CSC.T438	Distributed Algorithms	Defago Xavier	1Q	Basic notions of concurrency, networking, algorithms and data structures. Some programming experience.

Graduate major in Life Science and Technology	LST.A403	Biophysics	Kobatake Eiry, Ueno Takafumi, Kamachi Toshiaki, Mie Masayasu, Asakura Noriyuki	1Q	
Graduate major in Life Science and Technology	LST.A404	Cell Physiology	Tachibana Kazunori, Nakatogawa Hitoshi, Fujita Naonobu, Kano Fumi, Kadonosono Tetsuya	2Q	Undergraduate-level basic knowledge of cell biology.
Graduate major in Life Science and Technology	LST.A401	Molecular and Cellular Biology	Kimura Hiroshi, Iwasaki Hiroshi, Yamaguchi Yuki, Aizawa Yasunori	1Q	Acquisition of basics of molecular biology and cell biology.
Graduate major in Life Science and Technology	LST.A412	Biomaterial Science and Engineering	Tagawa Yoh-Ichi, Maruyama Atsushi, Mori Toshiaki, Matsuda Tomoko, Kinbara Kazushi	1Q	Undergraduate-level basic knowledge of materials science, molecular biology and genetic engineering.
Graduate major in Life Science and Technology	LST.A411	Biomolecular Engineering	Fukui Toshiaki, Ueda Hiroshi, Hirota Junji, Kitaguchi Tetsuya	2Q	Undergraduate-level basic knowledge of molecular biology and genetic engineering.
Graduate major in Architecture and Building Engineering	ARC.D402	Architectural Preservation and Renovation	Fujita Yasuhito	1Q	
Graduate major in Architecture and Building Engineering	ARC.D421	Architectural Design Studio I	Yasuda Koichi, Okuyama Shinichi, Tsukamoto Yoshiharu, Yamazaki Taisuke, Murata Ryo, Nasu Satoshi, Shiozaki Taishin, Ishida Kentaro	1Q	
Graduate major in Architecture and Building Engineering	ARC.D441	Passive Solar Design	Murata Ryo	1Q	
Graduate major in Architecture and Building Engineering	ARC.D443	Structural Planning in Architecture	Takeuchi Toru	2Q	
Graduate major in Architecture and Building Engineering	ARC.P441	Theories in Urban Analysis and Planning I	Saio Naoko	2Q	
Graduate major in Architecture and Building Engineering	ARC.D445	Theory of Architectural Design1	Murata Ryo, Yasuda Koichi, Okuyama Shinichi, Tsukamoto Yoshiharu, Yamazaki Taisuke, Shiozaki Taishin,	3～4Q	
Graduate major in Civil Engineering	CVE.G401	Aquatic Environmental Science	Yoshimura Chihiro	2Q	
Graduate major in Civil Engineering	CVE.B401	Water Resource Systems	Kanae Shinjiro	1Q	
Graduate major in Civil Engineering	CVE.C403	Geo-environmental Engineering	Takemura Jiro	1Q	Basic knowledge of civil and environmental engineering is required.
Graduate major in Global Engineering for Development, Environment and Society	GEG.S401	Environmental Policy	Murayama Takehiko, Nishikizawa Shigeo	1Q	The number of the participants are limited and students of Major in Global Engineering for Development, Environment and Society (GEDES) are prioritized.
Graduate major in Global Engineering for Development, Environment and Society	GEG.E413	Geospatial data analysis for environment studies	Varquez Alvin Christopher Galang	1Q	The number of face-to-face is limited to 90. If it exceeds the kimit, students who exceed need to take Livestream.
Graduate major in Global Engineering for Development, Environment and Society	GEG.I411	Education for Sustainable Development through Design and Technology	Sam T	1Q	The number of the participants are limited and students of Major in Global Engineering for Development, Environment and Society (GEDES) are prioritized.
Graduate major in Social and Human Sciences	SHS.P441	Graduate Lecture in Politics, Law and Administration S1A	Kaneko Hironao	1Q	
Graduate major in Social and Human Sciences	SHS.M461	Graduate Methodologies in Cognition, Mathematics and Information S1	Inohara Takehiro	1～2Q	
Graduate major in Energy Science and Engineering	ENR.A401	Interdisciplinary scientific principles of energy 1	Sasabe Takashi, Tago Teruoki, Ihara Manabu, Hayashi Miyuki, Kubo Shoichi, Wada Hiroyuki	1Q	
Graduate major in Energy Science and Engineering	ENR.A402	Interdisciplinary scientific principles of energy 2	Otomo Junichiro, Arai Hajime, Ihara Manabu, Koshihara Shinya, Okimoto Yoichi, Wada Hiroyuki	2Q	
Graduate major in Energy Science and Engineering	ENR.A403	Interdisciplinary principles of energy devices 1	Hagiwara Makoto, Hanamura Katsunori, Fujita Hideaki, Suekane Tetsuya, Mori Shinsuke	1Q	
Graduate major in Energy Science and Engineering	ENR.A404	Interdisciplinary principles of energy devices 2	Nabae Yuta, Ihara Manabu, Miyajima Shinsuke, Hirayama Masaaki, Wada Hiroyuki	2Q	
Graduate major in Energy Science and Engineering	ENR.H420	Introduction to Photochemistry I	Shishido Atsushi, Wada Hiroyuki	1Q	
Graduate major in Energy Science and Engineering	ENR.H403	Advanced Electrochemistry I	Arai Hajime, Hirayama Masaaki, Suzuki Kota	1Q	Basic class for electrochemistry beginner.
Graduate major in Energy Science and Engineering	ENR.H404	Advanced Electrochemistry II	Arai Hajime, Hirayama Masaaki, Suzuki Kota	2Q	Advanced class for those studied “Advanced Electrochemistry I” or equivalent.
Graduate major in Energy Science and Engineering	ENR.H405	Advanced Inorganic Materials Chemistry I	Hirayama Masaaki, Suzuki Kota	1Q	
Graduate major in Energy Science and Engineering	ENR.H406	Advanced Inorganic Materials Chemistry II	Hirayama Masaaki, Suzuki Kota	2Q	
Graduate major in Energy Science and Engineering	ENR.K430	Advanced course of turbulent flow and control	Tanahashi Mamoru	1Q	
Graduate major in Energy Science and Engineering	ENR.L401	Mechanical-to-electrical energy conversion	Fujita Hideaki	1Q	Knowledge of mechanics and electromagnetics equivalent to high school-level physics
Graduate major in Energy Science and Engineering	ENR.H410	Topics in Properties of Semiconductors	Wada Hiroyuki	1Q	
Graduate major in Energy Science and Engineering	ENR.I420	Advanced Lecture on Crystal Structure and Correlation with Properties of Solids	Yashima Masatomo	1Q	
Graduate major in Energy Science and Engineering	ENR.J407	Soft Materials Design	Matsumoto Hidetoshi	2Q	
Graduate major in Energy Science and Engineering	ENR.L410	Introduction to Photovoltaics	Miyajima Shinsuke	2Q	The students are expected to have basic knowledge of semiconductors. (p-type , n-type, Fermi level etc…)
Graduate major in Energy Science and Engineering	ENR.J405	Microstructure Evolution and Diffusion in Metals	Kimura Yoshisato, Nakada Nobuo	2Q	Students are required to have fundamental knowledge of metallurgy, particularly of phase diagrams and diffusion.
Graduate major in Energy Science and Engineering	ENR.B431	Recent technologies of fuel cells, solar cells butteries and energy system	Ihara Manabu, Hirayama Masaaki, Matsumoto Hidetoshi, Kodera Tetsuo, Sasabe Takashi, Maeda Kazuhiko, Miyajima Shinsuke, Manzhos Sergei	2Q	

Graduate major in Energy Science and Engineering	ENR.A402	Interdisciplinary scientific principles of energy 2	Otomo Junichiro, Arai Hajime, Yamada Akira, Hirayama Masaaki, Koshihara Shinya, Okimoto Yoichi, Wada Hiroyuki	2Q	
Graduate major in Energy Science and Engineering	ENR.A404	Interdisciplinary principles of energy devices 2	Nabae Yuta, Yamada Akira, Miyajima Shinsuke, Hirayama Masaaki, Wada Hiroyuki	2Q	
Graduate major in Energy Science and Engineering	ENR.A401	Interdisciplinary scientific principles of energy 1	Sasabe Takashi, Tago Teruoki, Ihara Manabu, Hayashi Miyuki, Kubo Shoichi, Wada Hiroyuki	1Q	
Graduate major in Energy Science and Engineering	ENR.A403	Interdisciplinary principles of energy devices 1	Hagiwara Makoto, Suekane Tetsuya, Okuno Yoshihiro, Mori Shinsuke	1Q	
Graduate major in Engineering Sciences and Design	ESD.D405	Materials and Design for Engineering Design	Inaba Kazuaki, Mizutani Yoshihiro	1Q	
Graduate major in Human Centered Science and Biomedical Engineering	HCB.C423	From Data Analytics to Machine Learning	Slavakis Konstantinos	2Q	
Graduate major in Nuclear Engineering	NCL.N401	Basic Nuclear Physics	Katabuchi Tatsuya	1Q	
Graduate major in Nuclear Engineering	NCL.N402	Nuclear Reactor Theory I	Obara Toru	1Q	
Graduate major in Nuclear Engineering	NCL.N405	Nuclear Reactor Thermal-hydraulics	Kato Yukitaka, Murakami Yoichi, Kikura Hiroshige, Kondo Masatoshi, Takahashi Hideharu	1Q	
Graduate major in Nuclear Engineering	NCL.N406	Nuclear Reactor Theory II	Obara Toru	2Q	
Graduate major in Nuclear Engineering	NCL.N407	Nuclear System Safety Engineering	Kikura Hiroshige, Kondo Masatoshi, Sagara Hiroshi, Takasu Hiroki, Takahashi Hideharu, Uchibori Akihiro, Matsumoto Tsutomu	1Q	
Graduate major in Nuclear Engineering	NCL.O401	Nuclear Non-proliferation and Security	Sagara Hiroshi, Hayashizaki Noriyosu	2Q	
Graduate major in Artificial Intelligence	ART.T452	Modeling of Continuous Systems	Ishii Hideaki, Aonishi Toru	1Q	Basic knowledge on differential equations, Laplace transform, dynamical systems
Graduate major in Artificial Intelligence	ART.T454	Advanced Topics in Artificial Intelligence S	Suzumura Toyotaro, Machida Motoya	1～2Q	In the first half of the lecture series knowledge of deep learning is desirable. For the second half of lecture series the completion of junior and senior-level probability course would be helpful, but not required as prerequisite.
Graduate major in Artificial Intelligence	ART.T467	Computer Vision	Sato Ikuro, Sekikawa Yusuke	1Q	Students are required to have undergraduate-level knowledges on computer science, linear algebra, calculus, probability, and statistics.
Graduate major in Urban Design and Built Environment	UDE.E402	GIS and Digital Image Processing for Built Environment	Matsuoka Masashi	1Q	
Graduate major in Urban Design and Built Environment	UDE.E403	Introduction to Atmospheric Urban Environment	Okaze Tsubasa	2Q	
Graduate major in Urban Design and Built Environment	UDE.S433	Introduction on Theory of Earthquake Ground Motion	Yamanaka Hiroaki	1Q	
Graduate major in Urban Design and Built Environment	UDE.E404	Basic Engineering on Thermal Environment	Asawa Takashi	2Q	
Graduate major in Urban Design and Built Environment	UDE.S401	Dynamics of Structures	Sato Daiki	1Q	
Graduate major in Urban Design and Built Environment	UDE.S402	Nonlinear Behavior of Concrete and Concrete Members	Kono Susumu, Nishimura Koshiro	1Q	
Graduate major in Earth-Life Science	ELS.C401	Earth-Life Science A	Nakamura Ryuhei, Sekine Yasuhito, Mcglynn Shawn, Jia Tony Z, Hara Masahiko	1Q	
Graduate major in Earth-Life Science	ELS.C402	Earth-Life Science B	Matsuura Tomoaki, Mcglynn Shawn, Fujishima Kosuke, Okochi Mina, Virgo Nathaniel David	1Q	
Tokyo Institute of Technology	LAW.X412	Study on Japanese Companies and Industries II	Kawashima Saho,Takemura Jiro	1Q	
Tokyo Institute of Technology	LAW.X419	Communication Skills in Japanese Industries II	Takemura Jiro, Morikawa Junko, Kuwata Shigeki, Hayashi Miyuki, Nakamura Takashi, Kitaguchi Yoshiaki, Wakabayashi Hitoshi, Sasaki Hiroshi, Kanenawa Tomoki, Ved Prasad Kafle, Yahya MAHZOUN, Masuyama Takaaki, Kou Hougou, Ochiai Katsuya	1Q	
Tokyo Institute of Technology	LAW.X425	Global Leadership Practice	Ota Eri	2Q	
Tokyo Institute of Technology	LAW.X440	Advanced Course of Traditional Technology and Intercultural Co-learning	Murakami Rie, Ota Eri, Watanabe Takashi, Kobayashi Equo, Matsuzaki Yuri, Kamura Kenshu, Bektas Yakup	1～2Q	Please take "LAW.X.353 Traditional Technology and Intercultural Co-learning" in case Bachelor students. (same lecture)
Tokyo Institute of Technology	LAW.X434	Idea, Writing and Communication	Kawashima Saho	1Q	

・Japanese courses

Please check the following web site of Japanese courses.

http://js.ila.titech.ac.jp/~web/japanese.html

List of Graduate Courses Available to Undergraduate-level International Exchange Students <For 3Q, 4Q of the 2023-2024 Academic Year>

Eligibility for Acceptance

・Students must be final year undergraduates or at an equivalent level.
・Students must meet the specific criteria for each course defined by the instructor and indicated in the final column of the table.
・Students must be enrolled on an appropriate exchange program that allows access to these courses.

As of September 2023

NOTE: TAKING ANY GRADUATE-LEVEL COURSES (400-LEVEL OR HIGHER) THAT IS NOT ON THIS LIST IS NOT PERMITTED UNDER ANY CIRCUMSTANCES. EVEN IF THE COURSE INSTRUCTOR INDIVIDUALLY APPROVES YOUR ENROLLMENT, YOUR REGISTRATION FOR SUCH A COURSE WILL BE REJECTED.

Graduate Major	No.	Course Name	Lecturer	Quarter	Eligibility criteria or prerequisite knowledge, etc.
Mathematics	MTH.A407	Advanced topics in Algebra C1	Ochiai Tadashi	3Q	Undergraduate-level knowledge of abstract algebra and number theory
	MTH.A408	Advanced topics in Algebra D1	Ochiai Tadashi	4Q	Undergraduate-level knowledge of abstract algebra and number theory
	MTH.B407	Advanced topics in Geometry C1	Gomi Kiyonori	3Q	Undergraduate-level knowledge of topology and abstract algebra
	MTH.B408	Advanced topics in Geometry D1	Gomi Kiyonori	4Q	Undergraduate-level knowledge of topology and abstract algebra
	MTH.C407	Advanced topics in Analysis C1	Tanabe Masaharu	3Q	Undergraduate-level knowledge of functional analysis and differential equations
	MTH.C408	Advanced topics in Analysis D1	Tanabe Masaharu	4Q	Undergraduate-level knowledge of functional analysis and differential equations
Physics	PHY.Q434	Field Theory II	Imamura Yosuke	3Q	Students are required to have knowledge of the undergraduate level of physics, electricity and magnetism, analytical dynamics, quantum mechanics, thermodynamics and statistical mechanics.
	PHY.F432	Astrophysics	Matsuhara Hideo	3Q	Students are required to have knowledge of the undergraduate level of physics, electricity and magnetism, analytical dynamics, quantum mechanics, thermodynamics and statistical mechanics.
	PHY.C450	Quantum Theory of Electrons in Solids	Ishizuka Hiroaki	3Q	Prerequisites: undergraduate-level quantum mechanics, thermodynamics and statistical mechanics.
	PHY.C447	Light and Matter II	Mukaiyama Takashi	3Q	Students are required to have knowledge of the undergraduate level of physics, electricity and magnetism, analytical dynamics, quantum mechanics, thermodynamics and statistical mechanics.
	PHY.C444	Quantum Transport	Fujisawa Toshimasa	4Q	Students are required to have knowledge of the undergraduate level of physics, electricity and magnetism, analytical dynamics, quantum mechanics, thermodynamics and statistical mechanics.
	PHY.C449	Laser Physics	Aikawa Kiyotaka	4Q	Students are required to have knowledge of the undergraduate level of physics, electricity and magnetism, analytical dynamics, quantum mechanics, thermodynamics and statistical mechanics.
Earth and Planetary Sciences	EPS.A426	Advanced Earth and Space Sciences I	Ishikawa Akira	3Q	
	EPS.A427	Advanced Earth and Space Sciences J	Ida Shigeru, Hernlund John William	3Q	
Mechanical Engineering	MEC.G433	Joining	Sato Chiaki, Yamazaki Takahisa	4Q	
	MEC.M434	Space Robotics	Nakanishi Hiroki	4Q	
	MEC.H433	Mechatronics Device and Control	Yamaura Hiroshi	4Q	
	MEC.H434	Advanced Course of Actuator Engineering	Suzumori Koichi, Yoshida Kazuhiro	3Q	
	MEC.C433	Solid Dynamics	Inoue Hirotsugu	3Q	
	MEC.E432	Properties of Solid Materials	Murakami Yoichi, Fushinobu Kazuyoshi	3Q	
	MEC.G432	Metalforming	Yoshino Masahiko, Ohtake Naoto	3Q	
	MEC.E433	Advanced Thermal-Fluids Measurement	Kikura Hiroshige, Saito Takushi	4Q	
	MEC.U433	Advanced Production Engineering A	Yoshino Masahiko, Takahashi Kunio, Saito Takushi	3～4Q	Intensive course with irregular schedule (11:00-14:00, 5 days x 3 weeks). Please make a contact with Prof. Fushinobu (fushinobu.k.aa@m.titech.ac.jp) before registration.
	MEC.U434	Advanced Internal Combustion Engine Engineering and Future Power Train A	Kosaka Hidenori, Hanamura Katsunori, Hirai Shuichiro	3～4Q	
	MEC.D433	Self-excited vibration	Nakano Yutaka	3Q	Students must have knowledge about vibration analysis method for one degree of freedom system and multi degree of freedom system.
Systems and Control Engineering	SCE.C401	System Identification and Estimation	Yamakita Masaki	3Q	
	SCE.S402	Fluid Robotics	Tsukagoshi Hideyuki	3Q	
	SCE.C452	Nonlinear and Adaptive Control	Hayakawa Tomohisa	3Q	
	SCE.A405	Inverse Problems and Data Assimilation	Amaya Kenji	3Q	
	SCE.C453	Network Control Systems	Ishizaki Takayuki	4Q	
	SCE.I402	Advanced Course of Sensing System Theory	Ohyama Shinji	4Q	
	SCE.I404	Automobile Transportation System and Environmental Impact	Sato Susumu	4Q	
	SCE.I433	Intelligent Communication and Social Interaction	Nakadai Kazuhiro, Itoyama Katsutoshi	3Q	
	SCE.I435	Visual and Knowledge Information Processing	Kawakami Rei	4Q	

Graduate Major	No.	Course Name	Lecturer	Quarter	Eligibility criteria or prerequisite knowledge, etc.
Electrical and Electronic Engineering	EEE.S411	Guided Wave Circuit Theory	Nishikata Atsuhiro, Aoyagi Takahiro	3Q	Knowledge of electromagnetics
	EEE.D421	Imaging Materials	Iino Hiroaki	3Q	
	EEE.D441	Information Storage Engineering	Nakagawa Shigeki, Takamura Yota	4Q	
	EEE.P402	Control and analysis of power and motor drive systems	Fujita Hideaki	3Q	Under graduate-level knowledge on electric machinery
	EEE.P413	Power electronics application to power systems	Hagiwara Makoto	3Q	
	EEE.P414	Power electronics control and analysis	Fujita Hideaki	4Q	Under graduate-level knowledge on power electronics
	EEE.D442	Special Seminar on Semiconductor Memory	Wakabayashi Hitoshi, Taguwa Tetsuya, Fujisawa Hiroki, Uchiyama Shiro, Goda Akira, , Nariyoshi Yasuhiro, Matsuhashi Hideki, Miyashita Toshihiko, Yoshida Kazuyoshi	3Q	
Information and Communications Engineering	ICT.A413	Communications and Computer Engineering II	Takahashi Atsushi, Nakahara Hiroki, Takagi Shigetaka, Nakamoto Takamichi, Isshiki Tsuyoshi, Motomura Masato, Hara Yuko, Sasaki Hiroshi	3Q	Sufficient basic academic skills in information and communications
	ICT.S414	Advanced Signal Processing (ICT)	Yamada Isao	3Q	Basic knowledge of linear algebra, multivariate calculus, complex analysis, Fourier analysis and digital signal processing
	ICT.I419	VLSI Layout Design	Takahashi Atsushi	4Q	Sufficient basic academic skills in integrated circuits and algorithm
	ICT.A418	Human-Centric Information Systems II	Nagai Takehiro, Yamaguchi Masahiro, Okumura Manabu, Kaneko Hirohiko, Suzuki Kenji, Slavakis Konstantinos, Motomura Masato, Obi Takashi, Shinozaki Takahiro, Kurosawa Minoru, Nakatani Momoko, Funakoshi Kotaro, Watanabe Yoshihiro	4Q	Sufficient basic academic skills in information and communications
	ICT.H421	Medical Imaging Systems	Nakamura Kentaro, Tabaru Marie, Obi Takashi	4Q	Acquisition of basics of Fourier transform and electrical circuits
	ICT.H422	Computational Brain	Koike Yasuharu	4Q	Sufficient basic knowledge of machine learning
	ICT.I415	VLSI System Design	Isshiki Tsuyoshi	3Q	Acquisition of basics of logic circuits, electrical circuits and integrated circuits
Industrial Engineering and Economics	IEE.B404	Advanced Cooperative Game Theory	Fukuda Emiko	4Q	This course requires basic knowledge in cooperative game theory. Thus, only students who have knowledge of the definition of solution in cooperative game and sufficient ability such as calculation of the core, the nucleolus and the Shapley value can register.
	IEE.B432	Advanced Topics in Macroeconomics	Morita Hiroshi	3Q	Students must have mastered the same level of knowledge as basic micro/macro economics before starting the course.
	IEE.D436	Healthcare Quality and Safety	Gu Xiuzhu	3Q	This course requires intensive class participation. Thus, only students with a high level of English who can participate in the classroom can register.
Materials Science and Engineering	MAT.P414	Soft Materials Function	Michinobu Tsuyoshi	3Q	
	MAT.P404	Soft Materials Functional Physics	Hayamizu Yuhei	4Q	Fundamental knowledge on chemical physics and quantum physics are needed.
	MAT.P403	Soft Materials Physics	Vacha Martin	3Q	
	MAT.M403	Environmental Degradation of Materials	Tada Eiji	4Q	
	MAT.C414	Introduction to Solid State Science	Katase Takayoshi, Majima Yutaka, Kamiya Toshio, Kawaji Hitoshi, Sasagawa Takao, Azuma Masaki, Hiramatsu Hidenori, Nakatsuji Kan, Gohda Yoshihiro, Izawa Seiichiro	4Q	
	MAT.C412	Polymeric Biomaterials	Tsuge Takeharu, Hayashi Tomohiro	3Q	
	MAT.P426	Thermal Properties of Materials	Morikawa Junko	4Q	
	MAT.M425	Recovery, Recrystallization and Texture of Metals	Tahara Masaki, Inamura Tomonari	3Q	
	MAT.M428	Properties and manufacturing process for automotive sheet steels	Yoshinaga Naoki	3～4Q	
	MAT.C416	Advanced Course of Nano-Particles Science	Miyauchi Masahiro, Yamaguchi Akira, Tokudome Hiromasa	3Q	4th grade undergdaduate level of fundamental knowledge on inorganic ceramics materials is needed.

Graduate Major	No.	Course Name	Lecturer	Quarter	Eligibility criteria or prerequisite knowledge, etc.
Chemical Science and Engineering	CAP.A423	Advanced Organic Synthesis I	Ito Shigekazu	3Q	Knowledge of bachelor level organic chemistry is desirable.
	CAP.A424	Advanced Organic Synthesis II	Ito Shigekazu	4Q	Knowledge of bachelor level organic chemistry is desirable.
	CAP.I417	Introduction to Chemical Engineering (Unit Operation)	Tanaka Masayoshi	3Q	
	CAP.C432	Physico-Chemical Property Analysis in Chemical Engineering	Taniguchi Izumi	3Q	Fundamental knowledge of chemical engineering and transport phenomena is required.
	CAP.I423	Advanced Organic Materials Chemistry	Fukushima Takanori, Shoji Yoshiaki	3Q	
	CAP.I416	Catalysis for the Environmental Issues	Yokoi Toshiyuki, Motokura Ken, Manaka Yuichi	3Q	
	CAP.C441	Transport Phenomena and Operation	Yoshikawa Shiro	4Q	Fundamental knowledge of chemical engineering and transport phenomena is required.
	CAP.I435	Advanced Geochemistry	Toyoda Sakae, Yamada Keita	3Q	
	CAP.C433	Phase Equilibrium Analysis in Chemical Engineering	Shimoyama Yusuke	3Q	Fundamental knowledge of chemical engineering and separation operation is required.
	CAP.C443	Advanced Reaction-Separation Process	Tago Teruoki, Shimoyama Yusuke	4Q	Fundamental knowledge of chemical reaction engineering and separation operation and process is required.
Mathematical and Computing Science	MCS.T405	Theory of Algorithms	Ito Toshiya	3Q	
	MCS.T417	Topics in Algebra	Tsuchioka Shunsuke	4Q	
	MCS.M422	Statistical Mechanics for Information Processing	Takabe Satoshi	4Q	
Computer Science	CSC.T431	Cyber-Physical Systems	Watanabe Takuo	3Q	Students must have successfully completed the related courses or have equivalent knowledge.
	CSC.T433	Advanced Computer Architecture	Kise Kenji	4Q	
	CSC.T442	Internet Applications	Ohta Masataka	4Q	
Life Science and Technology	LST.A406	Molecular Developmental Biology and Evolution	Kume Shoen, Kawakami Atsushi, Tanaka Mikiko, Kajikawa Masaki, Nikaido Masato	3Q	
	LST.A408	Computational Biology	Itoh Takehiko, Yamada Takuji, Kitao Akio	3Q	
	LST.A409	Physical Biology of the Cell	Hayashi Nobuhiro, Murakami Satoshi, Taguchi Hideki, Tokunaga Makio, Ishii Yoshitaka	4Q	Acquisition of basics of physical chemistry.
	LST.A407	Science of Metabolism	Hirasawa Takashi, Shiraki Nobuaki, Yamamoto Naoyuki, Kato Akira	3Q	Undergraduate-level basic knowledge of biochemistry, molecular biology and cell biology.
	LST.A410	Advanced Neuroscience	Ichinose Hiroshi, Suzuki Takashi, Miyashita Eizo, Akama Hiroyuki, Nonomura Keiko	4Q	Acquisition of basics of advanced neuroscience.
	LST.B404	International Career Development Basics	Suzuki Takashi, Kobatake Eiry, Kume Shoen, Aizawa Yasunori, Mcglynn Shawn	3～4Q	
	LST.A421	Functional Life Science	Nakamura Nobuhiro, Orihara Kanami, Koshikawa Naohiko, Ogura Shunichiro	4Q	Acquisition of basics of biochemistry, molecular biology and genome biology.
Architecture and Building Engineering	ARC.D422	Architectural Design Studio II	Yasuda Koichi, Okuyama Shin-Ichi, Tsukamoto Yoshiharu, Yamazaki Taisuke, Murata Ryo, Nasu Satoshi, Shiozaki Taishin	3～4Q	
	ARC.D424	Theory of Architectural Space and Planning	Tsukamoto Yoshiharu, Huang Sheng-Yuan	3～4Q	
	ARC.D446	Theory of Architectural Design II	Okuyama Shin-Ichi, Shiozaki Taishin	3～4Q	Only student in architectual course
	ARC.D447	Architectural Theory for Urban Space	Tsukamoto Yoshiharu	3～4Q	
	ARC.P442	Theories in Urban Analysis and Planning II	Osaragi Toshihiro, Kishimoto Maki	4Q	
	ARC.E425	Evaluation and Design of Thermal Environment	Asawa Takashi	4Q	
	ARC.D462	Architectural Behaviorology	Tsukamoto Yoshiharu, Yasuda Koichi, Okuyama Shin-Ichi	3～4Q	

Graduate Major	No.	Course Name	Lecturer	Quarter	Eligibility criteria or prerequisite knowledge, etc.
Civil Engineering	CVE.M401	Civil Engineering Analysis	Maruyama Taizo	3Q	Programming skills are required.
	CVE.M431	Probabilistic Concepts in Engineering Design	Sasaki Eiichi	4Q	
	CVE.F432	Principles of Construction Management	Hasegawa Atsushi, Matsukawa Keisuke, Hiraishi Kazuaki, Maeda Yasuyoshi, Koizumi Yukihiro, Takesue Naoki, Maki Kotaro	3～4Q	
	CVE.G402	Environmental Statistics	Yoshimura Chihiro	4Q	
	CVE.C402	Stability Problems in Geotechnical Engineering	Takahashi Akihiro, Takemura Jiro	3Q	Basic knowledge of soil mechanics is required.
	CVE.C431	Physical Modeling in Geotechnics	Takemura Jiro, Takahashi Akihiro	3～4Q	Basic knowledge of civil engineering and geotechnical engineering is required.
	CVE.E431	Integrated modeling of reinforced concrete structure	Chijiwa Nobuhiro	3～4Q	
	CVE.G403	Water Chemistry for Environmental Engineering	Fujii Manabu	3Q	
	CVE.D405	Transportation Science and Simulation	Seo Toru	4Q	
Global Engineering for Development, Environment and Society	GEG.S402	The economics and systems analysis of environment, resources and technology	Tokimatsu Koji	4Q	
	GEG.E411	Atmospheric Environment in Megacities	Kanda Manabu, Varquez Alvin Christopher Galang	4Q	
	GEG.T414	Linear Wave Theory and Simulation	Takada Jun-Ichi	3Q	Knowledge of partial differential equations, vector analysis, and Fourier analysis are expected.
	GEG.S413	Science Media and Communication	Nohara Kayoko, Andrews Eden Mariquit, Salani Giorgio	3Q	
	GEG.S414	Emerging Insights in Science and Art	Hara Masahiko, Heather Barnett, Nohara Kayoko	4Q	
Social and Human Sciences	SHS.S444	Graduate Lecture in Science, Technology and Society F1B	Bektas Yakup	4Q	
	SHS.L419	Special Lecture on Advanced Topics in Social and Human Sciences FA	Bektas Yakup	3Q	
	SHS.L420	Special Lecture on Advanced Topics in Social and Human Sciences FB	De Ferranti Hugh	4Q	Competence in reading and talking about academic articles about some of the topics and issues is essential. A presentation of your own project in English is required.
Energy Science and Engineering <Interdisciplinary graduate major>	ENR.A405	Interdisciplinary Energy Materials Science 1	Ueda Mitsutoshi, Maeda Kazuhiko, Miyauchi Masahiro, Okamoto Toshihiro	3Q	
	ENR.A406	Interdisciplinary Energy Materials Science 2	Matsumoto Hidetoshi, Ihara Manabu, Kimura Yoshisato, Nozaki Tomohiro, Matsuda Akifumi	4Q	
	ENR.A407	Energy system theory	Suekane Tetsuya, Yamada Akira, Obara Toru, Kawabe Kenichi, Tokimatsu Koji, Otomo Junichiro	3Q	
	ENR.A408	Economy of energy system	Tokimatsu Koji, Wakeyama Tatsuya, Otomo Junichiro, Nishikizawa Shigeo, Kajikawa Yuya, Goto Mika, Eto Ryo	4Q	
	ENR.J408	Energy Conversion Ceramics Materials	Miyauchi Masahiro, Matsuda Akifumi, Yamaguchi Akira, Matsushita Sachiko, Isobe Toshihiro, John David Baniecki	4Q	The students are required to have basic knowledge of solid-state chemistry and physics.
	ENR.K450	Advanced course of combustion physics	Kosaka Hidenori, Tanahashi Mamoru	3Q	
	ENR.K440	Advanced course of radiation transfer	Hanamura Katsunori	3Q	
	ENR.H411	Topics in Applied Electrochemistry	Arai Hajime, Hirayama Masaaki, Hayashi Masahiko	4Q	
	ENR.H415	Introduction to Organic Electrochemistry	Inagi Shinsuke	3Q	
	ENR.J401	Advanced Metal Physics	Shi Ji	3Q	
	ENR.J402	Physical Chemistry for High Temperature Processes -Thermodynamics-	Hayashi Miyuki	3Q	Students are required to have basic knowledge about the first, second and third law of thermodynamics.
	ENR.A405	Interdisciplinary Energy Materials Science 1	Ueda Mitsutoshi, Maeda Kazuhiko, Miyauchi Masahiro, Okamoto Toshihiro	3Q	
	ENR.A406	Interdisciplinary Energy Materials Science 2	Matsumoto Hidetoshi, Ihara Manabu, Kimura Yoshisato, Inagi Shinsuke, Matsuda Akifumi	4Q	
	ENR.I410	Optical properties of solids	Koshihara Shinya, Okimoto Yoichi	4Q	The students are expected to have basic knowledge of electromagnetism.
	ENR.A407	Energy system theory	Suekane Tetsuya, Yamada Akira, Obara Toru, Kawabe Kenichi, Tokimatsu Koji, Otomo Junichiro	3Q	
	ENR.H450	Environmentally-Friendly Polymer Chemistry	Satoh Kotaro	4Q	Students are expected to have fundamental knowledge of polymer chemistry and polymer synthesis.
	ENR.T436	Energy Scenario modeling	Wakeyama Tatsuya	3Q	

Graduate Major	No.	Course Name	Lecturer	Quarter	Eligibility criteria or prerequisite knowledge, etc.
Engineering Sciences and Design <Interdisciplinary graduate major>	ESD.F403	UX / Interaction Design	Nishida Yoshifumi, Oono Mikiko	3Q	
	ESD.F404	Affective Engineering / Emotional Design	Kahlon Yuval, Fujii Haruyuki	3Q	
	ESD.D404	Design of Medical and Welfare Device	Hijikata Wataru	3Q	
Human Centered Science and Biomedical Engineering <Interdisciplinary graduate major>	HCB.C422	Outline of Human Centered Science and Biomedical Engineering II	Yagi Tohru, Nakamura Kentaro, Yamaguchi Masahiro, Kitaguchi Tetsuya, Miura Yutaka, Ogura Shunichiro, Ikoma Toshiyuki, Tokuda Takashi	3Q	
	HCB.M463	Introduction to Biomedical Instrumentation	Yagi Tohru	3Q	
Nuclear Engineering <Interdisciplinary graduate major>	NCL.D406	Experiments for Chemistry in Nuclear Non-proliferation, Fuel Debris and Back-end Fuel Cycle B	Tsukahara Takehiko, Takao Koichiro, Nakase Masahiko	4Q	Students must have enough knowledge of nuclear chemistry and chemical engineering. You need registration as a radiation worker (ZC Category A)
	NCL.D402	Experiments for Material Engineering in Nuclear Non-proliferation and Decommissioning B	Yoshida Katsumi, Hubarevich Hanna, Takasu Hiroki	4Q	Student must have enough knowledge of nuclear materials. You need registration as a radiation worker (ZC Category A)
	NCL.C401	Nuclear Fuel Cycle Engineering	Tsukahara Takehiko, Takao Koichiro, Harada Takuya, Takasu Hiroki	3Q	Students must have enough knowledge of nuclear chemistry and chemical engineering.
	NCL.C402	Radioactive Waste Management and Disposal Engineering	Tsukahara Takehiko, Takao Koichiro, , Nishihara Kenji	3Q	Students must have enough knowledge of nuclear chemistry and chemical engineering.
	NCL.C403	Nuclear Chemical Engineering	Kato Yukitaka, Harada Takuya, Takasu Hiroki	4Q	Students must have enough knowledge of nuclear chemistry and chemical engineering.
	NCL.B401	Radiation Biology and Medicine	Matsumoto Yoshihisa	3Q	
	NCL.D407	Experiment on Thermalhydraulic and Severe Accident Engineering	Kikura Hiroshige, Endo Gen, Kondo Masatoshi, Sagara Hiroshi, Takahashi Hideharu	4Q	Student must have enough knowledge of nuclear reactor thermal-hydraulics and nuclear safety.
	NCL.N411	Innovative Nuclear Systems Design Project	Obara Toru	3～4Q	Student must have enough knowledge of nuclear physics, nuclear reactor theory, nuclear materials, nuclear reactor thermal-hydraulics, nuclear safety and nuclear energy systems.
Artificial Intelligence <Interdisciplinary graduate major>	ART.T463	Computer Graphics	Saito Suguru	4Q	
	ART.T462	Complex Networks	Murata Tsuyoshi	4Q	
	ART.T466	3D Computer Vision	Kanezaki Asako	4Q	Required: Basic knowledge of linear algebra and programming experience on Python
Urban Design and Built Environment <Interdisciplinary graduate major>	UDE.D408	History of Cities and Urban Planning	Fujita Yasuhito	4Q	
	UDE.D448	Architectural Awareness & Design	Nasu Satoshi	4Q	
	UDE.P404	City/Transport Planning and the Environment	Muromachi Yasunori	3Q	Basics of Transport Planning, Urban Planning, and Traffic Engineering
Earth-Life Science <Interdisciplinary graduate major>	ELS.C403	Earth-Life Science C	Ida Shigeru, Genda Hidenori, Hernlund John William, Sekine Yasuhito	3Q	
	ELS.C431	Research Development Project for Earth-Life Science M	Sekine Yasuhito, Fujishima Kosuke, Nakamura Ryuhei, Matsuura Tomoaki, Ida Shigeru, Genda Hidenori	1～4Q	
	ELS.C432	Communicating Earth-Life Science to the World M	Hernlund John William, Mcglynn Shawn, Heenatigala Thilina	3Q	
Global awareness and other breadth courses	LAW.X418	Study on Japanese Companies and Industries I	Takemura Jiro, Kawashima Saho, Morikawa Junko	3Q	
	LAW.X423	Technology and Product in Context	Nohara Kayoko, Salani Giorgio	4Q	
	LAW.X427	Our Sustainable Energy Future: Role of Business and Technology	Ota Eri, Murakami Rie, Ling Frank Hiroshi	3Q	
	LAW.X429	Effective Teamwork in Global Companies	Ota Eri, Murakami Rie, Nguyen Dung Minh	4Q	
	LAW.X432	Advanecd Co-learning Course for Global Scientists and Engineers 2	Murakami Rie, Ota Eri, Ananda Kumara	4Q	English proficiency equivalent to TOEIC score of 750 or above
	LAW.X441	Tohoku Co-learning Camp (Leadership Course)	Kawashima Saho, Yamaura Hiroshi	4Q	
	LAW.X433	Multicultural Understanding Through Art and International Experience	Kawashima Saho	4Q	

Interdisciplinary graduate major:

https://www.titech.ac.jp/english/public-relations/pdf/relationship-organization-en-202204.pdf

・Japanese courses

Please check the following web site of Japanese language courses.

http://js.ila.titech.ac.jp/~web/japanese.html