

List of Graduate Courses Available to Undergraduate-level International Exchange Students <For 3Q, 4Q of the 2026-2027 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 2026

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 | Syllabus             | Eligibility criteria or prerequisite knowledge, etc.                                                                                                                                                                   |
|------------------------------|----------|--------------------------------------------------------------------------|----------------------------------------------------|---------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mathematics                  | MTH.A403 | Advanced topics in Algebra C                                             | Oya Hironori                                       | 3Q      | <a href="#">Open</a> | Undergraduate-level knowledge of abstract algebra                                                                                                                                                                      |
|                              | MTH.A404 | Advanced topics in Algebra D                                             | Oya Hironori                                       | 4Q      | <a href="#">Open</a> | Undergraduate-level knowledge of abstract algebra                                                                                                                                                                      |
|                              | MTH.B403 | Advanced topics in Geometry C                                            | Kalman Tamas                                       | 3Q      | <a href="#">Open</a> | basic knowledge on smooth manifolds and algebraic topology is assumed                                                                                                                                                  |
|                              | MTH.B404 | Advanced topics in Geometry D                                            | Kalman Tamas                                       | 4Q      | <a href="#">Open</a> | basic knowledge on smooth manifolds and algebraic topology is assumed                                                                                                                                                  |
|                              | MTH.C403 | Advanced topics in Analysis C                                            | Kagei Yoshiyuki                                    | 3Q      | <a href="#">Open</a> | Undergraduate-level knowledge of real analysis, Fourier analysis, functional analysis and differential equations                                                                                                       |
|                              | MTH.C404 | Advanced topics in Analysis D                                            | Kagei Yoshiyuki                                    | 4Q      | <a href="#">Open</a> | Undergraduate-level knowledge of real analysis, Fourier analysis, functional analysis and differential equations. Students must take "Advanced topics in Analysis C" in the previous quarter.                          |
| Physics                      | PHY.C444 | Quantum Transport                                                        | Fujisawa Toshimasa                                 | 4Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
|                              | PHY.C445 | Physics of Two-Dimensional Materials                                     | Pu Jiang                                           | 4Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
|                              | PHY.C449 | Laser Physics                                                            | Somiya Kentaro                                     | 4Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
|                              | PHY.C450 | Quantum Theory of Electrons in Solids                                    | Ishizuka Hiroaki                                   | 3Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
|                              | PHY.C455 | Physics of Soft Matter                                                   | Nishiguchi Daiki                                   | 3Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
|                              | PHY.C456 | Nonequilibrium Physics                                                   | Hanai Ryo                                          | 3Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
|                              | PHY.F432 | Astrophysics                                                             | Fujimoto Ryuichi                                   | 3Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
|                              | PHY.P410 | Basic Writing in Physics                                                 | Webb Adrean                                        | 3~4Q    | <a href="#">Open</a> | Since students will write in English about their own research, prior research experience and unpublished research results in English are desirable. Consulting with the instructor prior to enrollment is recommended. |
|                              | PHY.Q434 | Field Theory II                                                          | Ito Katsushi                                       | 3Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
|                              | PHY.P418 | Colloquium in Physics II                                                 | Uchida Masaki                                      | 4Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
|                              | CHM.B434 | Advanced Course in Crystal Structure Science                             | Uekusa Hidehiro                                    | 4Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
|                              | CHM.B438 | Advanced Coordination Chemistry I                                        | Kondo Mio                                          | 4Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
|                              | CHM.C436 | Advanced Quantum Chemistry II                                            | Kitajima Masashi                                   | 4Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
|                              | CHM.D433 | Advanced Organometallic Chemistry                                        | Yamashita Makoto                                   | 3Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
|                              | CHM.D434 | Advanced Structural Organic Chemistry                                    | Toyota Shinji, Ono Kosuke                          | 4Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
| Earth and Planetary Sciences | EPS.A421 | Advanced Earth and Space Sciences G                                      | Kanda Wataru, Narita Shohei                        | 4Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
|                              | EPS.A422 | Advanced Earth and Space Sciences D                                      | Yokoyama Tetsuya                                   | 3Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
|                              | EPS.A429 | Advanced Earth and Space Sciences L                                      | Azuma Shintaro                                     | 3Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
| Mechanical Engineering       | MEC.C431 | Mechanics of Composite Materials                                         | Todoroki Akira, Sekiguchi Yu                       | 4Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
|                              | MEC.C435 | Solid State Ionics                                                       | Araki Wakako                                       | 4Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
|                              | MEC.D433 | Self-excited vibration                                                   | Nakano Yutaka                                      | 3Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
|                              | MEC.E432 | Properties of Solid Materials                                            | Murakami Yoichi, Kim Byunggi                       | 3Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
|                              | MEC.E433 | Advanced Thermal-Fluids Measurement                                      | Takahashi Hideharu, Saito Takushi                  | 4Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
|                              | MEC.G433 | Joining                                                                  | Sato Chiaki, Yamazaki Takahisa                     | 4Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
|                              | MEC.H433 | Mechatronics Device and Control                                          | Yamaura Hiroshi                                    | 4Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
|                              | MEC.H434 | Advanced Course of Actuator Engineering                                  | Yoshida Kazuhiro, Endo Gen, Nabae Hiroyuki         | 3Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
|                              | MEC.M434 | Space Robotics                                                           | Nakanishi Hiroki                                   | 4Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |
|                              | MEC.U434 | Advanced Internal Combustion Engine Engineering and Future Power Train A | Kosaka Hidenori, Sasabe Takashi, Nagasawa Tsuyoshi | 3~4Q    | <a href="#">Open</a> |                                                                                                                                                                                                                        |
|                              | MEC.I430 | Design of Medical and Welfare Device                                     | Wataru Hijikata                                    | 3Q      | <a href="#">Open</a> |                                                                                                                                                                                                                        |

| Graduate Major                             | No.      | Course Name                                               | Lecturer                                                                                                                                                                                                                        | Quarter | Syllabus             | Eligibility criteria or prerequisite knowledge, etc.                                                                                                       |
|--------------------------------------------|----------|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Systems and Control Engineering            | SCE.A404 | Nonlinear Dynamics                                        | Nakao Hiroya                                                                                                                                                                                                                    | 3Q      | <a href="#">Open</a> |                                                                                                                                                            |
|                                            | SCE.A405 | Inverse Problems and Data Assimilation                    | Amaya Kenji                                                                                                                                                                                                                     | 3Q      | <a href="#">Open</a> |                                                                                                                                                            |
|                                            | SCE.C401 | System Identification and Estimation                      | Yamakita Masaki                                                                                                                                                                                                                 | 3Q      | <a href="#">Open</a> |                                                                                                                                                            |
|                                            | SCE.C452 | Nonlinear and Adaptive Control                            | Hayakawa Tomohisa                                                                                                                                                                                                               | 3Q      | <a href="#">Open</a> |                                                                                                                                                            |
|                                            | SCE.C453 | Network Control Systems                                   | Ishizaki Takayuki                                                                                                                                                                                                               | 4Q      | <a href="#">Open</a> |                                                                                                                                                            |
|                                            | SCE.I404 | Automobile Transportation System and Environmental Impact | Sato Susumu                                                                                                                                                                                                                     | 4Q      | <a href="#">Open</a> |                                                                                                                                                            |
|                                            | SCE.I435 | Visual and Knowledge Information Processing               | Kawakami Rei                                                                                                                                                                                                                    | 4Q      | <a href="#">Open</a> |                                                                                                                                                            |
|                                            | SCE.S402 | Fluid Robotics                                            | Tsukagoshi Hideyuki                                                                                                                                                                                                             | 3Q      | <a href="#">Open</a> |                                                                                                                                                            |
| Electrical and Electronic Engineering      | EEE.D422 | Fundamentals of Organic Electronics                       | Manaka Takaaki, Iino Hiroaki                                                                                                                                                                                                    | 3Q      | <a href="#">Open</a> |                                                                                                                                                            |
|                                            | EEE.D442 | Special Seminar on Semiconductor Memory                   | Wakabayashi Hitoshi, Taguwa Tetsuya, Fujisawa Hiroki, Miyashita Toshihiko, Uchiyama Shiro, Tanaka Tomoharu, Goda Akira, Matsuhashi Hideki, Nariyoshi Yasuhiro, Ikebuchi Yoshinori                                               | 3Q      | <a href="#">Open</a> |                                                                                                                                                            |
|                                            | EEE.D444 | Special Lecture II on Integrated Green-niX                | Wakabayashi Hitoshi, Tsutsui Kazuo, Hisamoto Digh, Shimizu Ken, Koyama Masato, Tsunekawa Koji, Saito Tomoya, Sato Kenoh, Sasaki Shun, Tada Munehiro, Nariyoshi Yasuhiro, Ashihara Hiroshi, Yamahata Gento, Kobayashi Masakazu   | 3Q      | <a href="#">Open</a> |                                                                                                                                                            |
|                                            | EEE.D471 | Physics and Applications of Silicon Devices               | Ohmi Shun-Ichiro                                                                                                                                                                                                                | 4Q      | <a href="#">Open</a> | Undergraduate-level knowledge of semiconductor physics and devices                                                                                         |
|                                            | EEE.P402 | Control and analysis of power and motor drive systems     | Fujita Hideaki                                                                                                                                                                                                                  | 3Q      | <a href="#">Open</a> | Under graduate-level knowledge on electric machinery                                                                                                       |
|                                            | EEE.P414 | Power electronics control and analysis                    | Fujita Hideaki                                                                                                                                                                                                                  | 4Q      | <a href="#">Open</a> | Under graduate-level knowledge on power electronics                                                                                                        |
|                                            | EEE.P461 | Pulsed Power Technology                                   | Takeuchi Nozomi                                                                                                                                                                                                                 | 3Q      | <a href="#">Open</a> | Under graduate-level knowkedge on electrical circuits and electromagnetics                                                                                 |
| Information and Communications Engineering | ICT.A418 | Human-Centric Information Systems II                      | Nagai Takehiro, Yamaguchi Masahiro, Koike Yasuharu, Kaneko Hirohiko, Suzuki Kenji, Slavakis Konstantino, Motomura Masato, Obi Takashi, Shinozaki Takahiro, Nakatani Momoko, Fujiki Daichi, Funakoshi Kotaro, Watanabe Yoshihiro | 4Q      | <a href="#">Open</a> | Sufficient basic academic skills in information and communications                                                                                         |
|                                            | ICT.I415 | VLSI System Design                                        | Isshiki Tsuyoshi                                                                                                                                                                                                                | 3Q      | <a href="#">Open</a> | Acquisition of basics of logic circuits, electrical circuits and integrated circuits                                                                       |
|                                            | ICT.I419 | VLSI Layout Design                                        | Takahashi Atsushi                                                                                                                                                                                                               | 4Q      | <a href="#">Open</a> | Sufficient basic academic skills in integrated circuits and algorithm                                                                                      |
|                                            | ICT.I420 | Analog Integrated Circuit Design                          | Islam A K M Mahfuzul                                                                                                                                                                                                            | 4Q      | <a href="#">Open</a> | Electric and electronic circuit, basic device physics, linear systems, basic control theory,                                                               |
| Industrial Engineering and Economics       | IEE.D436 | Healthcare Quality and Safety                             | Gu Xiuzhu                                                                                                                                                                                                                       | 3Q      | <a href="#">Open</a> | This course requires intensive class participation.<br>Thus, only students with a high level of English who can participate in the classroom can register. |
| Materials Science and Engineering          | MAT.C416 | Advanced Course of Nano-Particles Science                 | Miyauchi Masahiro                                                                                                                                                                                                               | 3Q      | <a href="#">Open</a> | A basic knowledge of inorganic materials equivalent to the 4th-year undergraduate level is desirable.                                                      |
|                                            | MAT.M402 | Characterization of Nanomaterials                         | Sone Masato, Sannomiya Takumi                                                                                                                                                                                                   | 4Q      | <a href="#">Open</a> |                                                                                                                                                            |
|                                            | MAT.M412 | Reliability and Durability of Metals and Alloys           | Kobayashi Equo, Kobayashi Satoru                                                                                                                                                                                                | 3Q      | <a href="#">Open</a> |                                                                                                                                                            |
|                                            | MAT.M430 | Quantum theory of metals                                  | Nakatsuji Kan, Gohda Yoshihiro                                                                                                                                                                                                  | 3Q      | <a href="#">Open</a> |                                                                                                                                                            |
|                                            | MAT.M432 | Aerospace materials and modelling techniques              | Mikael Perrut                                                                                                                                                                                                                   | 3Q      | <a href="#">Open</a> |                                                                                                                                                            |
|                                            | MAT.P403 | Soft Materials Physics                                    | Vacha Martin                                                                                                                                                                                                                    | 3Q      | <a href="#">Open</a> |                                                                                                                                                            |
|                                            | MAT.P404 | Soft Materials Functional Physics                         | Hayamizu Yuhei                                                                                                                                                                                                                  | 4Q      | <a href="#">Open</a> | Fundamental knowledge on chemical physics and quantum physics are needed.                                                                                  |
|                                            | MAT.P414 | Soft Materials Function                                   | Michinobu Tsuyoshi                                                                                                                                                                                                              | 3Q      | <a href="#">Open</a> |                                                                                                                                                            |
|                                            | MAT.P417 | Medical Polymers                                          | Kojima Chie                                                                                                                                                                                                                     | 4Q      | <a href="#">Open</a> |                                                                                                                                                            |
|                                            | MAT.P418 | Physical Chemistry of Soft Nanomaterials                  | Kaneko Satoshi                                                                                                                                                                                                                  | 3Q      | <a href="#">Open</a> |                                                                                                                                                            |
|                                            | MAT.P420 | Soft Matter Processing for Functional Materials           | Ryu Meguya                                                                                                                                                                                                                      | 4Q      | <a href="#">Open</a> |                                                                                                                                                            |
|                                            | MAT.P426 | Thermal Properties of Materials                           | Morikawa Junko                                                                                                                                                                                                                  | 4Q      | <a href="#">Open</a> |                                                                                                                                                            |

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|---------------------------------------|----------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|---------|----------------------|---------------------------------------------------------------------------------------------------------------|
| Chemical Science and Engineering      | CAP.A423 | Advanced Organic Synthesis I                                  | Ito Shigekazu                                                                                                           | 3Q      | <a href="#">Open</a> | Knowledge of bachelor level organic chemistry is required.                                                    |
|                                       | CAP.A424 | Advanced Organic Synthesis II                                 | Ito Shigekazu                                                                                                           | 4Q      | <a href="#">Open</a> | Knowledge of bachelor level organic chemistry is required.                                                    |
|                                       | CAP.A425 | Advanced Biofunctional Chemistry I                            | Tanaka Katsunori                                                                                                        | 3Q      | <a href="#">Open</a> | Knowledge of synthetic and bioorganic chemistry is required.                                                  |
|                                       | CAP.A426 | Advanced Biofunctional Chemistry II                           | Tanaka Katsunori                                                                                                        | 4Q      | <a href="#">Open</a> | Knowledge of synthetic and bioorganic chemistry is required.                                                  |
|                                       | CAP.A427 | Advanced Molecular Catalyst Chemistry I                       | Nakajima Yumiko                                                                                                         | 3Q      | <a href="#">Open</a> |                                                                                                               |
|                                       | CAP.A428 | Advanced Molecular Catalyst Chemistry II                      | Nakajima Yumiko                                                                                                         | 4Q      | <a href="#">Open</a> |                                                                                                               |
|                                       | CAP.A429 | Advanced Physical Organic Chemistry I                         | Maeda Chihiro                                                                                                           | 3Q      | <a href="#">Open</a> | Knowledge of bachelor level organic chemistry is required.                                                    |
|                                       | CAP.A467 | Advanced electronic structures in solids I                    | Yoshimatsu Kohei                                                                                                        | 3Q      | <a href="#">Open</a> | Fundamental knowledge of quantum chemistry is required.                                                       |
|                                       | CAP.A468 | Advanced electronic structures in solids II                   | Yoshimatsu Kohei                                                                                                        | 4Q      | <a href="#">Open</a> | Fundamental knowledge of quantum chemistry is required.                                                       |
|                                       | CAP.C433 | Phase Equilibrium Analysis in Chemical Engineering            | Shimoyama Yusuke                                                                                                        | 3Q      | <a href="#">Open</a> | Fundamental knowledge of chemical engineering and separation operation is required.                           |
|                                       | CAP.C441 | Transport Phenomena and Operation                             | Yoshikawa Shiro                                                                                                         | 4Q      | <a href="#">Open</a> | Fundamental knowledge of chemical engineering and transport phenomena is required.                            |
|                                       | CAP.C443 | Advanced Reaction-Separation Process                          | Fujitsuka Hiroyasu                                                                                                      | 4Q      | <a href="#">Open</a> | Fundamental knowledge of chemical reaction engineering and separation operation and process is required.      |
|                                       | CAP.I416 | Catalysis for the Environmental Issues                        | Yokoi Toshiyuki, Manaka Yuichi                                                                                          | 3Q      | <a href="#">Open</a> |                                                                                                               |
|                                       | CAP.I417 | Introduction to Chemical Engineering (Unit Operation)         | Tanaka Masayoshi                                                                                                        | 3Q      | <a href="#">Open</a> |                                                                                                               |
|                                       | CAP.I423 | Advanced Organic Materials Chemistry                          | Fukushima Takanori, Shoji Yoshiaki                                                                                      | 3Q      | <a href="#">Open</a> |                                                                                                               |
|                                       | CAP.I435 | Advanced Geochemistry                                         | Toyoda Sakae, Yamada Keita                                                                                              | 3Q      | <a href="#">Open</a> |                                                                                                               |
|                                       | CAP.T425 | Frontiers of Chemical Science and Engineering III             | ※Costa Gomes Margarida、※Su Xiao                                                                                         | 3~4Q    | <a href="#">Open</a> |                                                                                                               |
| Mathematical and Computing Science    | MCS.M429 | Distributed Systems                                           | Sakamoto Ryuichi                                                                                                        | 3Q      | <a href="#">Open</a> |                                                                                                               |
|                                       | MCS.T408 | Discrete, Algebraic and Geometric Structures                  | Suzuki Sakie, Nishibata Shinya, Umehara Masaaki, Arai Zin                                                               | 3Q      | <a href="#">Open</a> |                                                                                                               |
|                                       | MCS.T410 | Applied Probability                                           | Miyoshi Naoto, Nakano Yumiharu                                                                                          | 3Q      | <a href="#">Open</a> |                                                                                                               |
|                                       | MCS.T416 | Logic and Computation                                         | Kashima Ryo                                                                                                             | 3Q      | <a href="#">Open</a> |                                                                                                               |
|                                       | MCS.T419 | Stochastic differential equations                             | Nakano Yumiharu, Miyoshi Naoto                                                                                          | 4Q      | <a href="#">Open</a> |                                                                                                               |
| Computer Science                      | CSC.T431 | Cyber-Physical Systems                                        | Watanabe Takuo                                                                                                          | 3Q      | <a href="#">Open</a> | Students must have successfully completed the related courses or have equivalent knowledge.                   |
|                                       | CSC.T440 | Computer Organization and Architecture                        | Kise Kenji                                                                                                              | 4Q      | <a href="#">Open</a> |                                                                                                               |
| Life Science and Technology           | LST.A406 | Molecular Developmental Biology and Evolution                 | Kume Shoen, Kawakami Atsushi, Tanaka Mikiko, Kajikawa Masaki, Nikaïdo Masato                                            | 3Q      | <a href="#">Open</a> | Undergraduate-level basic knowledge of biochemistry, molecular biology and cell biology.                      |
|                                       | LST.A407 | Science of Metabolism                                         | Hirasawa Takashi, Shiraki Nobuaki, Kato Akira, Masuda Shinji                                                            | 3Q      | <a href="#">Open</a> | Undergraduate-level basic knowledge of biochemistry, molecular biology and cell biology.                      |
|                                       | LST.A408 | Computational Biology                                         | Itoh Takehiko, Yamada Takuji, Kitao Akio, Uriu Koichiro, Sato Kengo                                                     | 3Q      | <a href="#">Open</a> | Undergraduate-level basic knowledge of physical chemistry, biochemistry, molecular biology and cell biology.  |
|                                       | LST.A409 | Physical Biology of the Cell                                  | Hayashi Nobuhiro, Murakami Satoshi, Taguchi Hideki, Ishii Yoshitaka, Takinoue Masahiro                                  | 4Q      | <a href="#">Open</a> | Acquisition of basics of physical chemistry.                                                                  |
|                                       | LST.A410 | Advanced Neuroscience                                         | Suzuki Takashi, Hirota Junji, Kuroda Kumi, Yoshida Takako, Saneyoshi Takeo                                              | 4Q      | <a href="#">Open</a> | Basic Knowledge of Neuroscience.                                                                              |
|                                       | LST.A421 | Functional Life Science                                       | Nakamura Nobuhiro, Orihara Kanami, Koshikawa Naohiko, Ogura Shunichiro, Kuroda Kumi, Prokofeva Kseniia                  | 4Q      | <a href="#">Open</a> | Acquisition of basics of biochemistry, molecular biology and genome biology.                                  |
|                                       | LST.B404 | International Career Development Basics                       | Suzuki Takashi, Kobatake Eiry, Kume Shoen, Aizawa Yasunori, Mcglynn Shawn                                               | 3~4Q    | <a href="#">Open</a> | Basic Knowledge of Biochemistry and/or Molecular biology.                                                     |
| Architecture and Building Engineering | ARC.D422 | Architectural Design Studio II                                | Okuyama Shin-Ichi, Tsukamoto Yoshiharu, Yamazaki Taisuke, Murata Ryo, Shiozaki Taishin, Nousaku Fuminori, Naganuma Toru | 3~4Q    | <a href="#">Open</a> |                                                                                                               |
|                                       | ARC.D423 | Architectural Design Studio III                               | Okuyama Shin-Ichi, Tsukamoto Yoshiharu, Yamazaki Taisuke, Murata Ryo, Shiozaki Taishin, Nousaku Fuminori, Naganuma Toru | 4Q      | <a href="#">Open</a> |                                                                                                               |
|                                       | ARC.D424 | Theory of Architectural Space and Planning                    | Tsukamoto Yoshiharu, Nousaku Fuminori, Hirao Siena, Shui Yanfei                                                         | 3~4Q    | <a href="#">Open</a> |                                                                                                               |
|                                       | ARC.D446 | Theory of Architectural Design II                             | Okuyama Shin-Ichi, Shiozaki Taishin                                                                                     | 3~4Q    | <a href="#">Open</a> |                                                                                                               |
|                                       | ARC.D447 | Architectural Theory for Urban Space                          | Nousaku Fuminori, Tsukamoto Yoshiharu, Hirao Siena                                                                      | 3~4Q    | <a href="#">Open</a> |                                                                                                               |
|                                       | ARC.D462 | Architectural Behaviorology                                   | Tsukamoto Yoshiharu, Okuyama Shin-Ichi, Nousaku Fuminori, Hirao Siena                                                   | 3~4Q    | <a href="#">Open</a> |                                                                                                               |
|                                       | ARC.S407 | Advanced Steel Structure Design                               | Mitsui Kazuya                                                                                                           | 4Q      | <a href="#">Open</a> | Basic knowledge of structural engineering and access to a finite element analysis (FEA) software environment. |
|                                       | ARC.S408 | Advanced course on vibration of building and ground vibration | Nakano Takaharu                                                                                                         | 3Q      | <a href="#">Open</a> |                                                                                                               |

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|-----------------------------------------------------------------------|----------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|---------|----------------------|------------------------------------------------------------------------------------------------------------|
| Civil Engineering                                                     | CVE.A431 | Fracture Control Design of Steel Structures                                 | Sasaki Eiichi                                                                                                            | 4Q      | <a href="#">Open</a> |                                                                                                            |
|                                                                       | CVE.A434 | Reliability, Risk and Resilience Assessment of Infrastructures              | Matsuzaki Hiroshi                                                                                                        | 3~4Q    | <a href="#">Open</a> | Basic knowledge of structural engineering is required.                                                     |
|                                                                       | CVE.C402 | Stability Problems in Geotechnical Engineering                              | Takahashi Akihiro                                                                                                        | 3Q      | <a href="#">Open</a> | Basic knowledge of soil mechanics is required.                                                             |
|                                                                       | CVE.C431 | Physical Modeling in Geotechnics                                            | Takahashi Akihiro, Sawada Mai                                                                                            | 3~4Q    | <a href="#">Open</a> | Basic knowledge of civil engineering and geotechnical engineering is required.                             |
|                                                                       | CVE.D405 | Transportation Science and Simulation                                       | Seo Toru                                                                                                                 | 4Q      | <a href="#">Open</a> |                                                                                                            |
|                                                                       | CVE.D406 | Urban Economic Analysis                                                     | Takayama Yuki                                                                                                            | 4Q      | <a href="#">Open</a> | Basic knowledge of microeconomics, including game theory, is required.                                     |
|                                                                       | CVE.F432 | Principles of Construction Management                                       | Hasegawa Atsushi, Hiraishi Kazuaki, Aung Kyaw Min, Maeda Yasuyoshi, Sanada Akiko, Maki Kotaro, Takesue Naoki             | 3~4Q    | <a href="#">Open</a> |                                                                                                            |
|                                                                       | CVE.G403 | Water Chemistry for Environmental Engineering                               | Fujii Manabu                                                                                                             | 3Q      | <a href="#">Open</a> |                                                                                                            |
|                                                                       | CVE.M401 | Civil Engineering Analysis                                                  | Maruyama Taizo                                                                                                           | 3Q      | <a href="#">Open</a> | Programming skills are required.                                                                           |
| Global Engineering for Development, Environment and Society           | GEG.S402 | The economics and systems analysis of environment, resources and technology | Tokimatsu Koji                                                                                                           | 4Q      | <a href="#">Open</a> |                                                                                                            |
|                                                                       | GEG.S413 | Science Media and Communication                                             | Nohara Kayoko, Andrews Eden Mariquit, Salani Giorgio                                                                     | 3Q      | <a href="#">Open</a> |                                                                                                            |
| Social and Human Sciences                                             | SHS.L419 | Special Lecture on Advanced Topics in Social and Human Sciences FA          | Bektas Yakup                                                                                                             | 3Q      | <a href="#">Open</a> |                                                                                                            |
|                                                                       | SHS.S444 | Graduate Lecture in Science, Technology and Society F1B                     | Bektas Yakup                                                                                                             | 4Q      | <a href="#">Open</a> |                                                                                                            |
| Energy Science and Informatics<br><Interdisciplinary graduate major>  | ESI.A408 | Economy of energy system                                                    | Tokimatsu Koji, Wakeyama Tatsuya, Otomo Junichiro, Nishikizawa Shigeo, Goto Mika, Masui Toshihiko, Eto Ryo               | 4Q      | <a href="#">Open</a> |                                                                                                            |
|                                                                       | ESI.H411 | Topics in Applied Electrochemistry                                          | Arai Hajime, Hirayama Masaaki, Kobayashi Takeshi                                                                         | 4Q      | <a href="#">Open</a> |                                                                                                            |
|                                                                       | ESI.H415 | Advanced Organic Electrochemistry                                           | Inagi Shinsuke                                                                                                           | 3Q      | <a href="#">Open</a> |                                                                                                            |
|                                                                       | ESI.H450 | Environmentally-Friendly Polymer Chemistry                                  | Satoh Kotaro                                                                                                             | 4Q      | <a href="#">Open</a> | Students are expected to have fundamental knowledge of polymer chemistry and polymer synthesis.            |
|                                                                       | ESI.I421 | Advanced Optical properties of solids                                       | Okimoto Yoichi                                                                                                           | 4Q      | <a href="#">Open</a> | The students are expected to have basic knowledge of electromagnetism.                                     |
|                                                                       | ESI.J401 | Advanced Metal Physics                                                      | Shi Ji                                                                                                                   | 3Q      | <a href="#">Open</a> |                                                                                                            |
|                                                                       | ESI.J402 | Physical Chemistry for High Temperature Processes -Thermodynamics-          | Hayashi Miyuki                                                                                                           | 3Q      | <a href="#">Open</a> | Students are required to have basic knowledge about the first, second and third law of thermodynamics.     |
|                                                                       | ESI.J408 | Energy Conversion Ceramics Materials                                        | John David Baniecki, Miyauchi Masahiro                                                                                   | 4Q      | <a href="#">Open</a> | The students are required to have basic knowledge of solid-state chemistry and physics.                    |
|                                                                       | ESI.K450 | Advanced course of combustion physics                                       | Kosaka Hidenori, Tanahashi Mamoru, Shimura Masayasu, Suzuki Sayaka                                                       | 3Q      | <a href="#">Open</a> |                                                                                                            |
|                                                                       | ESI.L401 | Mechanical-to-electrical energy conversion                                  | Fujita Hideaki                                                                                                           | 3Q      | <a href="#">Open</a> | Knowledge of mechanics and electromagnetics equivalent to high school-level physics                        |
|                                                                       | ESI.T436 | Energy Scenario modeling                                                    | Wakeyama Tatsuya                                                                                                         | 3Q      | <a href="#">Open</a> |                                                                                                            |
|                                                                       |          |                                                                             |                                                                                                                          |         |                      |                                                                                                            |
| Engineering Sciences and Design<br><Interdisciplinary graduate major> | ESD.A402 | Design Thinking Fundamentals                                                | Saito Shigeki, Sakamoto Hiraku, Inaba Kazuaki, Hijikata Wataru, Nakatani Momoko, Taoka Yuki, Kahlon Yuval, Kado Masanori | 3Q      | <a href="#">Open</a> | Class Schedule : 10/1 17:15-20:50, 10/3 10:00-18:15, 10/5 13:30-19:00, 10/8 13:30-17:05, 10/15 13:30-19:00 |
|                                                                       | ESD.D404 | Design of Medical and Welfare Device                                        | Hijikata Wataru                                                                                                          | 3Q      | <a href="#">Open</a> |                                                                                                            |
|                                                                       | ESD.F403 | UX / Interaction Design                                                     | Nishida Yoshifumi, Oono Mikiko                                                                                           | 3Q      | <a href="#">Open</a> |                                                                                                            |

| Graduate Major                                                                               | No.      | Course Name                                                                                   | Lecturer                                                                                                                                                                                        | Quarter | Syllabus             | Eligibility criteria or prerequisite knowledge, etc.                                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Science and Technology<br>for Health Care and Medicine<br><Interdisciplinary graduate major> | STM.A402 | Introduction to Neural Engineering                                                            | Yagi Tohru                                                                                                                                                                                      | 3Q      | <a href="#">Open</a> |                                                                                                                                                                                                                                                 |
|                                                                                              | STM.C405 | Outline of Science and Technology for Health Care and Medicine II                             | Shino Motoki, Nakamura Kentaro, Kitaguchi Tetsuya, Miura Yutaka, Ogura Shunichiro, Chang Tso-Fu, Tokuda Takashi, Tamamura Hirokazu                                                              | 3Q      | <a href="#">Open</a> |                                                                                                                                                                                                                                                 |
| Nuclear Engineering<br><Interdisciplinary graduate major>                                    | NCL.C401 | Nuclear Fuel Cycle Engineering                                                                | Tsukahara Takehiko, Takao Koichiro, Harada Takuya, Takasu Hiroki                                                                                                                                | 3Q      | <a href="#">Open</a> | Students must have enough knowledge of nuclear chemistry and chemical engineering.                                                                                                                                                              |
|                                                                                              | NCL.C402 | Radioactive Waste Management and Disposal Engineering                                         | Tsukahara Takehiko, Takao Koichiro, Asano Hidekazu, Nishihara Kenji                                                                                                                             | 3Q      | <a href="#">Open</a> | Students must have enough knowledge of nuclear chemistry and chemical engineering.                                                                                                                                                              |
|                                                                                              | NCL.C403 | Nuclear Chemical Engineering                                                                  | Nakase Masahiko                                                                                                                                                                                 | 4Q      | <a href="#">Open</a> | Students must have enough knowledge of nuclear chemistry and chemical engineering.                                                                                                                                                              |
|                                                                                              | NCL.D402 | Experiments for Material Engineering in Nuclear Non-proliferation and Decommissioning B       | Yoshida Katsumi, Yasui Shintaro, Takasu Hiroki                                                                                                                                                  | 4Q      | <a href="#">Open</a> | Student must have enough knowledge of nuclear materials.<br>You need registration as a radiation worker (ZC Category A)                                                                                                                         |
|                                                                                              | NCL.D406 | Experiments for Chemistry in Nuclear Non-proliferation, Fuel Debris and Back-end Fuel Cycle B | Tsukahara Takehiko, Takao Koichiro, Nakase Masahiko                                                                                                                                             | 4Q      | <a href="#">Open</a> | Students must have enough knowledge of nuclear chemistry and chemical engineering.<br>You need registration as a radiation worker (ZC Category A)                                                                                               |
|                                                                                              | NCL.D407 | Experiment on Thermalhydraulic and Severe Accident Engineering                                | Kikura Hiroshige, Endo Gen, Kondo Masatoshi, Sagara Hiroshi, Takahashi Hideharu                                                                                                                 | 4Q      | <a href="#">Open</a> | Student must have enough knowledge of nuclear reactor thermal-hydraulics and nuclear safety.                                                                                                                                                    |
|                                                                                              | NCL.N411 | Innovative Nuclear Systems Design Project                                                     | Obara Toru, Sagara Hiroshi                                                                                                                                                                      | 3~4Q    | <a href="#">Open</a> | 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<br><Interdisciplinary graduate major>                                | ART.T462 | Complex Networks                                                                              | Murata Tsuyoshi                                                                                                                                                                                 | 4Q      | <a href="#">Open</a> |                                                                                                                                                                                                                                                 |
|                                                                                              | ART.T463 | Computer Graphics                                                                             | Saito Suguru                                                                                                                                                                                    | 4Q      | <a href="#">Open</a> |                                                                                                                                                                                                                                                 |
|                                                                                              | ART.T476 | Advanced Topics in Computer Vision                                                            | Kanezaki Asako, Sato Ikuro, Ikehata Satoshi, Sekikawa Yusuke                                                                                                                                    | 3Q      | <a href="#">Open</a> | Students are required to have undergraduate-level knowledge on computer science, linear algebra, calculus, probability, and statistics.<br>Students should be able to carry out practical exercises using programming languages such as Python. |
| Urban Design and Built Environment<br><Interdisciplinary graduate major>                     | UDE.D417 | Introduction to Methodology of Social Studies                                                 | Kotani Hitomu                                                                                                                                                                                   | 3Q      | <a href="#">Open</a> |                                                                                                                                                                                                                                                 |
|                                                                                              | UDE.E410 | Introduction to Machine Learning for Urban Design and Built Environment                       | Miyamoto Takashi                                                                                                                                                                                | 3Q      | <a href="#">Open</a> |                                                                                                                                                                                                                                                 |
|                                                                                              | UDE.P404 | City/Transport Planning and the Environment                                                   | Muromachi Yasunori                                                                                                                                                                              | 3Q      | <a href="#">Open</a> |                                                                                                                                                                                                                                                 |
|                                                                                              | UDE.S404 | Passive-control Structures and Base-isolated Structures against Earthquakes                   | Sato Daiki, Kishiki Shoichi, Ishihara Tadashi, Yamazaki Yoshihiro, Chen Yinli                                                                                                                   | 4Q      | <a href="#">Open</a> |                                                                                                                                                                                                                                                 |
|                                                                                              | UDE.S410 | Fire Risk Assessment of the Built Environment                                                 | Himoto Keisuke                                                                                                                                                                                  | 3Q      | <a href="#">Open</a> |                                                                                                                                                                                                                                                 |
|                                                                                              | UDE.S436 | Fundamental of Earthquake Ground Motion                                                       | Tsuno Seiji                                                                                                                                                                                     | 3Q      | <a href="#">Open</a> |                                                                                                                                                                                                                                                 |
| Earth-Life Science<br><Interdisciplinary graduate major>                                     | ELS.C403 | Earth-Life Science C                                                                          | Genda Hidenori, Hernlund John William, Sekine Yasuhito, Kodama Takanori, Kadoya Shintaro, Hernlund Christine Tabytha                                                                            | 3Q      | <a href="#">Open</a> |                                                                                                                                                                                                                                                 |
|                                                                                              | ELS.C432 | Science Communication and Society M                                                           | Hernlund John William, Heenatigala Thilina Nishadh                                                                                                                                              | 3Q      | <a href="#">Open</a> |                                                                                                                                                                                                                                                 |
| Global awareness<br>and other breadth courses                                                | LAW.X418 | Study on Japanese Companies and Industries I                                                  | Kobayashi Satoru, Morikawa Junko, Nakamura Takashi, Wakabayashi Hitoshi, Sasaki Hiroshi, Sawada Mai, Sasaki Yoshizumi, Zhang Shengde, Suzuki Masaki, Nakano Masaaki, Lin Hongyi, Bosu Subrojati | 3Q      | <a href="#">Open</a> |                                                                                                                                                                                                                                                 |
| Entrepreneurship courses                                                                     | ENT.C448 | Master's Critical Thinking                                                                    | Ricinschi Dan                                                                                                                                                                                   | 4Q      | <a href="#">Open</a> |                                                                                                                                                                                                                                                 |
|                                                                                              | ENT.G401 | Advanced Global Problem Based Co-Learning                                                     | Murakami Rie, Ota Eri, Ananda Kumara, Hope Thomas Edwin                                                                                                                                         | 4Q      | <a href="#">Open</a> |                                                                                                                                                                                                                                                 |
|                                                                                              | ENT.G452 | Advanced Course of Innovative Product Design with Traditional Technologies                    | Matsuzaki Yuri, Murakami Rie, Ota Eri, Taoka Yuki, Watanabe Takashi, Kobayashi Equo                                                                                                             | 3~4Q    | <a href="#">Open</a> | In the case of many applicants, we may conduct a selection process.                                                                                                                                                                             |
|                                                                                              | ENT.G454 | Our Sustainable Energy Future: Role of Business and Technology                                | Murakami Rie, Ota Eri,                                                                                                                                                                          | 3Q      | <a href="#">Open</a> |                                                                                                                                                                                                                                                 |
|                                                                                              | ENT.G456 | Free your Creativity through Art (for graduate)                                               | Ota Eri, Murakami Rie, Meyer Zuse                                                                                                                                                               | 3~4Q    | <a href="#">Open</a> |                                                                                                                                                                                                                                                 |
|                                                                                              | ENT.L456 | Effective Teamwork in Global Companies                                                        | Murakami Rie, Ota Eri, Nguyen Dung Minh                                                                                                                                                         | 4Q      | <a href="#">Open</a> |                                                                                                                                                                                                                                                 |

**•Japanese courses**  
 Please check the following web site of Japanese language courses.  
<http://js.ila.titech.ac.jp/~web/japanese.html>