早稲田大学大学院

GRADUATE SCHOOL OF WASEDA UNIVERSITY

PEP WISE Program

Graduate Program for Power Energy Professionals

AY 2025 Program Handbook

(Appendix of Handbook for Graduate Program)

Graduate School of Fundamental Science and Engineering
(Applied Mechanics and Aerospace Engineering / Electric and Physical Systems)

Graduate School of Creative Science and Engineering
(Earth Sciences, Resources and Environmental Engineering)

Graduate School of Advanced Science and Engineering
(Applied Chemistry / Electrical Engineering and Bioscience / Nanoscience and Nanoengineering / Advanced Science and Engineering)

Graduate School of Environment and Energy Engineering
(Environment and Energy Engineering)

Graduate Program for Power Energy Professionals (PEP)
Program Policy

Diploma policy: Completion certificates and the awarding of degrees

The program fosters human resources with deep expertise in electric power and energy science and technology in areas ranging from energy-related materials to systems. They will master the comprehensive perspective with integration of the humanities and science/engineering knowledge and skills necessary for the design and creation of society with next-generation energy system reform (including economics and systems). Specifically, the program aims to produce doctoral human resources, advanced knowledge professionals for society who (a) are capable of pioneering work in new fusion fields, from the cooperative optimization of various energy resources to the creation of new fusion knowledge and value; and (b) can provide leadership in innovation and the solution of electric power and energy problems faced by human society.

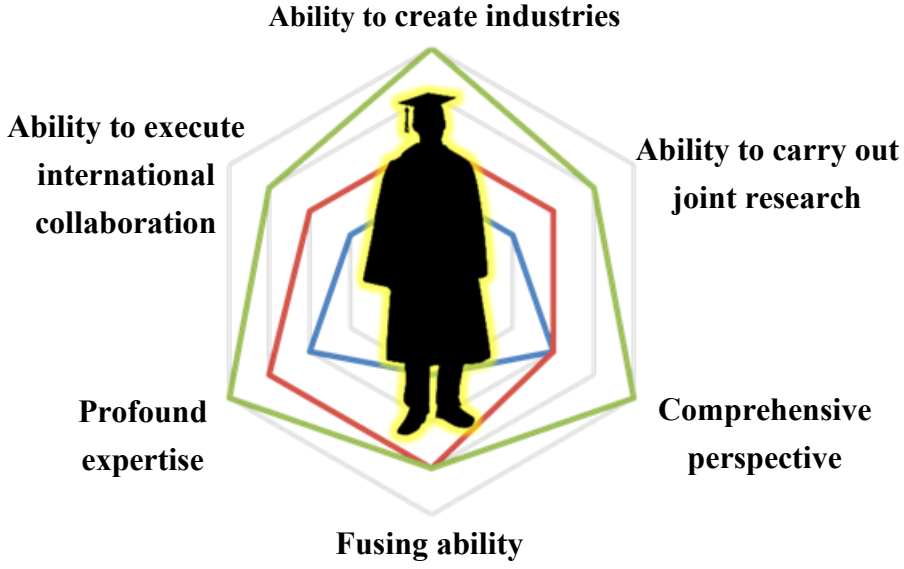
Curriculum policy: Organization and implementation

Lectures and seminars will be provided to develop the following six capabilities.

- The **profound expertise** required by specialists in electricity/energy science and technology
- The **fusing ability** necessary for the creation of new value through multidisciplinary cooperation and resource cooperation
- The **comprehensive perspective** necessary for communication, negotiation, and cooperation with government, society, and industry
- The **ability to carry out joint research** with companies
- The **ability to execute international collaboration** needed to develop research results in international scenarios, working from the perspective of international standardization
- The **ability to create industries** with the potential for development of research results into business creations

Admissions policy: Admission of program participants

- Based on the results of the PEP Selective Examination (SE), we accept students from Japan and overseas who have excellent basic professional skills and language skills, and who are motivated to contribute to the identification and solution of problems faced by human society in the field of electric power and energy.
- In addition to the admissions procedure, we will accept students who have a comprehensive perspective based on substantial work experience.



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I. Overview and features of the PEP Program

1. Program overview

Power Energy Professionals (PEP) Program is **a five-year integrated professional doctoral program** delivered by the 13 universities (Hokkaido University, Tohoku University, University of Fukui, University of Yamanashi, Tokyo Metropolitan University, Yokohama National University, Nagoya University, Osaka University, Hiroshima University, Tokushima University, Kyushu University, University of the Ryukyus, and Waseda University).

The objective of the program is to produce knowledge professionals who will lead the creation of new industrial entities in various sectors by optimizing the energy value chain, which constitutes one of the core concepts of carbon neutrality.

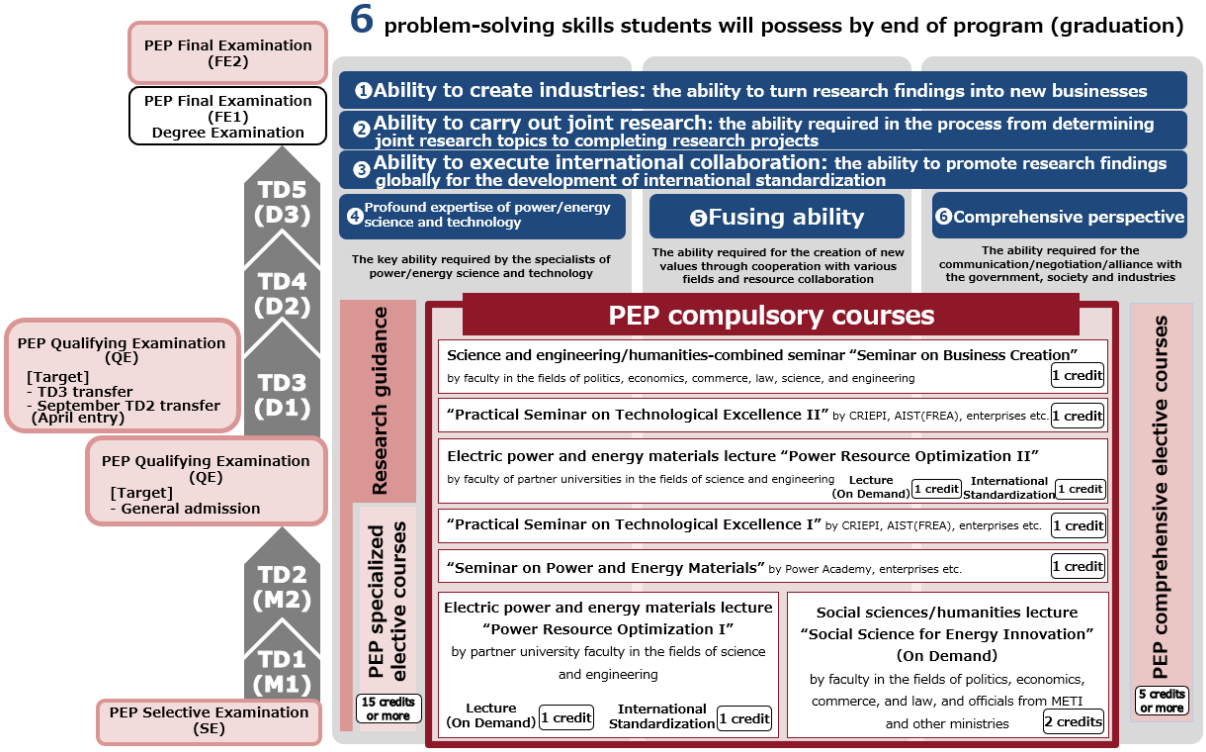
Through a single end-to-end course that provides education in a spectrum of fields ranging from energy materials to power, we provide a systematic education and research program based on power resource optimization, a new academic theory centered on two main objectives: technological innovation and social innovation with institutional design and unconventional added value, which can bring business to fruition.

The 13 universities in Japan bring together front-line faculty members, and through industry-academia collaboration with various institutions and partnerships with overseas universities, offer the five-year PEP WISE Program (Doctoral Program for World-leading Innovative & Smart Education), integrating master's courses and doctoral courses with world-class quality assurance.

PEP Program Certificates of Completion will be issued to program students who complete both the requirements of the program and the courses required by departments of graduate schools with which they are affiliated (hereinafter referred to as the "the affiliated department"). In this program, the PEP compulsory courses (9 courses, 10 credits) will be offered at Waseda University, and the PEP specialized elective courses and PEP comprehensive elective courses will be offered at each affiliated department. The PEP compulsory courses at Waseda University, which will be offered in the form of on-demand courses, intensive courses, and practical seminars at partner institutions outside the university, are tailored to the needs of the students of the 12 partner universities.

Note: Since completion of the program is a prerequisite for enrollment in and completion of studies at each affiliated department, it is necessary to check the enrollment and completion requirements of each affiliated department.

The outline of the program is presented below.



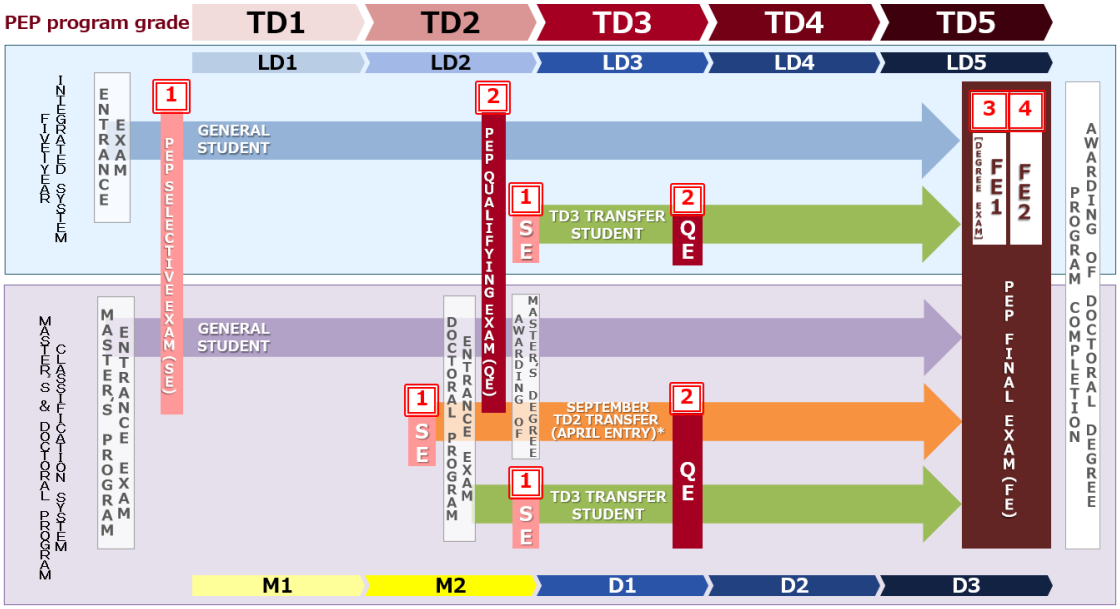
2. Features of the program

- Five-year integrated curriculum
- Students in the program are categorized as TD. TD1 corresponds to the first year of the master's program/first year of the integrated doctoral program; TD3 corresponds to the first year of the doctoral program/third year of the integrated doctoral program.
- Students whose affiliated institution is not Waseda University will be registered as graduate school exchange students at Waseda University.
- Each affiliated university supports RA stipends for students participating in joint research with partner institutions and companies.
- The quality of the program is ensured by the multiple guidance system, which is operated by the principal advisor, the deputy advisor(s) from partner universities, and consulting personnel employed by or from companies, etc.
- After evaluation by means of a strict Qualifying Examination (hereinafter referred to as "QE") based on precisely specified evaluation criteria and Final Examinations (hereinafter referred to as "FE") including the degree examination, approximately 20 Power Energy Professionals are produced each year.
- The degree examination in each affiliated department is designated FE1, and PEP's own completion examination is designated FE2. Students must pass both examinations to complete the program.
- Graduates of the program will receive a PEP Program Certificate of Completion issued jointly by the 13 universities.

II. PEP Program schedule and examination requirements

1. Year-by-year schedule

The program will be implemented on the premise of a five-year integrated education system that combines existing two-year master's programs and a three-year doctoral program. A program flowchart is shown below.



*September TD2 transfer (April entry)

It means the students who enrolled in their affiliated department in April and transferred to this program in September during TD2. For students of April TD2 transfer (April/September entry) or September TD2 transfer (September entry), regarding the year-by-year schedule after transfer, refer to "General Student".

2. Requirements for each examination

The QE and FE2 for this program will be conducted under the supervision of the Collaborative Program Committee of the Power Energy Professionals (PEP) Graduate Program as follows:

		SE category number	Standard testing period	Eligibility	Examination items	Examiners and others
QE	General admission	[I] [II] [III] [IV] [VIII] [IX] [X] [XI]	TD2	30 credits or more (3 or more for PEP compulsory courses; 15 or more for PEP specialized elective courses; 12 or more for other courses (selected from PEP specialized elective courses or PEP comprehensive elective courses) One academic paper (including the paper being submitted)	Research background; results; and presentation of research plan for TD3 and subsequent	[Examiners] Principal advisor; Deputy advisor(s); Consulting personnel; Social science / humanities advisor [Examination Period] TD2: December to end of February TD3: December to mid-March For students who enrolled in their affiliated department in the fall semester: June to end of September
	- TD3 transfer - September TD2 transfer (April entry)*	[V] [VI] [VII] [XII] [XIII]	TD3	3 credits or more (2 or more for PEP compulsory courses; and one or more for either PEP specialized elective courses or PEP comprehensive elective courses) One academic paper (including the paper being submitted) or an academic paper proposal	Research background; results; and presentation of research plan for TD4 and subsequent	
FE	- General admission - September TD2 transfer (April entry)*	[I] [II] [III] [IV] [VII] [VIII] [IX] [X] [XI]	TD5	<FE1> In line with the rules of each affiliated department <FE2> 45 credits or more (10 or more for PEP compulsory courses; 15 or more for PEP specialized elective courses; 5 or more for PEP comprehensive elective courses. One or more joint paper with a partner institution at international academic meetings or the like.	<FE1> Degree examination; thesis defense; oral examination <FE2> Presentation on business potential and social significance	The dissertation must include consideration related to science and engineering/humanities-combined areas such as the business potential of the research and contribution to social reform [Examiners] <FE1> Examiners appointed by each affiliated department. However, faculty members from affiliated universities will participate as the deputy advisor(s). <FE2> Deputy advisor(s); Consulting personnel; Social science / humanities advisor [Examination Period] September completion: June to August March completion: December to February
	TD3 transfer	[V] [VI] [XII] [XIII]		<FE1> In line with the rules of each affiliated department <FE2> 15 credits or more (10 or more for PEP compulsory courses; 5 or more for either PEP specialized elective courses or PEP comprehensive elective courses) courses; 5 or more for PEP comprehensive elective courses One or more joint paper presented with a partner institution at an international academic meeting or the like.		

* September TD2 transfer (April entry)
It means the students who enrolled in their affiliated department in April and transferred to this program in September during TD2.

[Note]

- "Credits" includes credits for courses currently in progress (and not yet completed). However, if the credits which the student is currently taking are included in your eligibility to take the examinations, the student must pass the credits as a prerequisite for passing the examinations.
- Students transferring into TD3 will be eligible to proceed from TD3 once they make a presentation and complete an oral examination of the same standard as that of the QE at the time of the Selection Examination (SE). The QE will be conducted before the student proceeds to TD4.

III. PEP Program completion guide

1. Requirements for program completion

A total of 45 credits (15 credits for TD3 transfer students) are required for completion of the program. The curriculum is designed not just for meet the objectives of the program, but also to enable the students to acquire sufficient cultural knowledge to ensure that they will be refined graduates of the program. To that end, specialized elective courses and comprehensive elective courses vary by affiliated department.

(1) Common to all universities
The requirements for completion of the program are: (a) acquisition of the required credits (see (2) to (5) below for details); at least one paper co-authored with a partner institution in principle and presented at an international conference; and passing grades on the final examinations (FE1 and FE2). If the courses completed can be counted as both the required credits for completion of the affiliated department and the required credits for completion of the program, they will be accepted as valid for both completion requirements.

(2) Program students whose affiliated institution is not Waseda University [excluding TD3 transfer students]
At Waseda University, the students are required to take only 10 credits for PEP compulsory courses provided by Waseda, and the remaining 35 credits (at least 15 credits for PEP specialized elective courses and at least 5 credits for PEP comprehensive elective courses) must be taken from among the courses offered by each student's affiliated department. At Waseda University, in addition to the 10 credits for compulsory courses provided by the Faculty of Science and Engineering, the students may also take some open courses, i.e. Graduate School Common Courses offered by the Global Education Center; however, the credits for those open courses cannot be counted as required credits for completion of the program.

In addition to acquiring the credits required for completion of the program, students must acquire, by the time they complete TD2, the required number of credits for completion of the master's program as specified by their affiliated department. Similarly, during the period from TD3 to TD5, the students must have acquired the required number of credits for completion of the doctoral program, as specified by their affiliated department. The students should follow the guidelines of their affiliated department and consult with their principal advisor regarding satisfying the requirements of their specific program.

(3) Program students affiliated with Waseda University [excluding TD3 transfer students]
The 45 credits required for completion of the program must be acquired in accordance with the prescribed number of credits indicated in the table below.

[Prescribed number of credits]

	Master's program (*2) (TD1–TD2)	Master's and doctoral program (*2) Total required credits (TD1–TD5)	Remarks
PEP compulsory courses	3 credits	**10 credits**	
PEP specialized elective courses	15 credits	**15 credits**	In principle, courses provided by the master's program
PEP comprehensive elective courses (*1)	N/A	**5 credits**	The courses are specified in 共通科目の学科目配当表 (Course List of Common Courses) of 基幹/創造/先進理工学研究科要項 (Student Handbook for Graduate School of Fundamental / Creative / Advanced Science and Engineering)(*3)
Other (selected from PEP specialized elective courses or PEP comprehensive elective courses)	12 credits	**15 credits**	
Total required credits	30 credits (required at the time of the QE)	**45 credits**	

(*1) It is essential to ensure that the courses taken in the master's program are different from those taken in the doctoral program.
(*2) For guidelines on course registration for the integrated doctoral program, students should refer to the Bulletin/Student Handbook issued by their affiliated department.
(*3) For students in the Graduate School of Environment and Energy Engineering, only the courses offered for the master's program are counted. For details, ask their affiliated department.

In addition to the credits required for completion of the program, the student must acquire the credits required for completion of the master's program as specified by their affiliated department, in the

prescribed manner by the time they complete TD2. Similarly, during the period from TD3 to TD5, the students must have acquired the number of credits required for the doctoral program (including 5 credits for the doctoral program) as specified by their affiliated department. For guidelines on course registration in each program, students should refer to the Bulletin/Student Handbook issued by their affiliated department.

(4) TD3 transfer students whose affiliated department is not Waseda University

At Waseda University, students are required to acquire only 10 credits for PEP compulsory courses provided by Waseda; the remaining 5 credits (for either PEP specialized elective courses or PEP comprehensive elective courses) must be selected from among those provided by their affiliated department. In addition to acquiring the credits required for completion of the program, the students must also acquire the credits required for completion of the doctoral program, as specified by their affiliated department, during the period from TD3 to TD5. For guidelines on course registration in each program, students should refer to the Bulletin/Student Handbook issued by their affiliated department and consult with their principal advisor.

(5) TD3 transfer students whose affiliation is Waseda University

The 15 credits required to complete the program for students transferring from the doctoral program (TD3) must be acquired in accordance with the prescribed number of credits indicated in the table below.

[Prescribed number of credits]

	Doctoral program (TD3) (*2)	Doctoral program Total required credits (*2) (TD3–TD5)	Remarks
PEP compulsory courses	2 credits	**10 credits**	
PEP comprehensive elective courses (*1)	1 credit	**5 credits**	The courses are specified in 共通科目の学科目配当表 (Course List of Common Courses) of 基幹/創造/先進理工学研究科要項 (Student Handbook for Graduate School of Fundamental / Creative / Advanced Science and Engineering)(*3)
Total required credits	3 credits (required at the time of the QE)	**15 credits**	

(*1) It is essential to ensure that the courses taken in the master's program are different from those taken in the doctoral program.

(*2) For guidelines on course registration for the integrated doctoral program, students should refer to the Bulletin/Student Handbook issued by their affiliated department.

(*3) Students in the Graduate School of Environment and Energy Engineering are asked to check the details with their affiliated department.

During the period from TD3 to TD5, the students must have completed the number of credits required for the doctoral program (including 5 doctoral credits) as specified by their affiliated department. For guidelines on course registration in each program, students should refer to the Bulletin/Student Handbook issued by their affiliated department.

2. Early completion

In the classification system, which divides courses into master's and doctoral programs, in the first year of the PEP master's program (TD1), program students who have completed at least 36 credits of PEP courses for TD1 and TD2 (at least 6 credits of PEP compulsory courses, at least 15 credits of PEP specialized elective courses, and at least 5 credits of PEP comprehensive elective courses) and have achieved outstanding results from their master's thesis research may advance to the doctoral program (TD3) in the second year of the master's program provided that Collaborative Program Committee of the Power Energy Professionals (PEP) Graduate Program gives its approval based on their principal advisor's recommendation. In that case, the QE must be conducted prior to TD3.

Students who have earned all of the credits required to complete the program in fewer than 3 years

after enrollment in the doctoral program (TD3) and who have achieved outstanding results in their doctoral dissertation research may take the PEP Final Examinations (FE1 and FE2) after satisfying all of the examination requirements, provided that the Collaborative Program Committee of the Power Energy Professionals (PEP) Graduate Program gives its approval based on their principal advisor's recommendation. They then may complete the program earlier by passing both exams.

Furthermore, with regard to early completion of the integrated doctoral program, consult with your academic advisor and check the requirements, etc. with the PEP Program office at the university affiliated with the program.

3. Extension of the program enrollment period

Program students for whom an FE1 (degree examination) has been postponed or who have failed an FE1 may extend the enrollment period of the program within the allowable enrollment period specified by their affiliated universities, provided that they have acquired all of the credits required to complete the program by the end of TD5.

4. Re-examination for the QE and FE2

(1) QE re-examination

If a student's QE is delayed because they failed to qualify during the standard testing period, or if they fail a QE once and retake it, the QE will be treated as a "QE re-examination."
A QE re-examination may be conducted only once and shall not be conducted beyond one year from the original standard testing period or one year from when the student failed the original QE.
When a student fails a QE re-examination (including cases where a student has not taken a QE and the re-examination period has passed), the student shall lose their status as a program student at the end of the semester in which the QE re-examination was conducted.
For details, check with the PEP Program office staff at your affiliated university.

(2) FE2 re-examination

An FE2 conducted during an extended program enrollment period or after full term withdrawal(*) is handled as an "FE2 re-examination." (If a student failed an FE2 that was conducted during the standard testing period for the FE2, an FE re-examination is not applicable.)
Students who have extended their program may take an FE2 re-examination at the time of the FE1 conducted during the extended enrollment period.
Full term withdrawal students may take an FE2 re-examination at the time of applying for a degree examination (at the time of the FE1), provided that they have earned all of the credits required for the completion of the program by the date of withdrawal. The student shall become disqualified from the program at the time of the withdrawal and shall be deemed to have completed the program by passing the FE1 and FE2 re-examination after having returned to the program.
Students who have extended their program and full term withdrawal students must satisfy the requirement of "at least one paper co-authored with a partner institution in principle" by the time the FE2 re-examination is conducted.
The FE2 re-examination may be taken only once; if a student fails an FE2 re-examination, no re-examination may be approved, and students who have extended their program shall become disqualified for the program on the last date of the semester in which the FE2 re-examination was conducted.
For details, check with the PEP Program office staff at your affiliated university.

(*) Full term withdrawal:
To withdraw from a doctoral course without satisfying the requirements of passing the dissertation examination and tests required to complete the course. At Waseda University, this is referred to as "withdrawal after the completion of doctoral research guidance".

5. List of PEP courses

Course descriptions may change due to certain circumstances. Students should refer to the syllabus for information including faculty members in charge, class format, and timing.

For program students whose affiliated institution is Waseda University, items (2) and (3) below include canceled courses and courses that are only offered every other year, so please check with your affiliated department about the availability of each course before drawing up a completion plan.

Program students whose affiliated institution is not Waseda University should check with their affiliated university every year regarding information on the PEP specialized elective courses and the PEP comprehensive elective courses.

(1) PEP compulsory courses (courses set at Waseda University, common to all 13 universities)

For program students whose affiliated institution is Waseda University, the 10 credits for the 9 PEP compulsory courses will NOT be counted as credits required for completion in their affiliated department.

Program students whose affiliated institution is not Waseda University should check with their affiliated universities regarding the treatment of the 10 credits from the 9 PEP compulsory courses.

Course title	Term	Credits	Scheduled Course Period
Power Resource Optimization I (Lecture)	Summer Intensive On-demand	1	TD1 or higher
Power Resource Optimization I (International Standardization)	Summer Intensive	1	TD1 or higher
Social Science for Energy Innovation	Spring Semester On-demand	2	TD1 or higher
Seminar on Power and Energy Materials	Summer Intensive	1	TD1 or higher
Practical Seminar on Technological Excellence I (Electrical Power / Energy Material)	Summer Intensive	1	TD1 or higher
Seminar on Business Creation	Summer Intensive	1	TD1 or higher
Power Resource Optimization II (Lecture)	Summer Intensive On-demand	1	TD3 or higher
Power Resource Optimization II (International Standardization)	Summer Intensive	1	TD1 or higher
Practical Seminar on Technological Excellence II (Electrical Power / Energy Material)	Summer Intensive	1	TD3 or higher

[Note]

- Students who have transferred to the program in TD2 or higher should prioritize taking courses that are TD1 or higher.
- If a course is divided into “I” (a basic course) or “II” (an advanced course), students should start with the “I”.
- The Practical seminar on technological excellence is divided into the Electric Power and the Energy Materials, so students should take the specialty that they chose at the time of the PEP Selective Examination (SE).
- Although Seminar on Business Creation is designated for TD1 or higher, students are recommended to take the seminar in TD3.
- Program students who have completed the “I” in TD1 and have achieved particularly excellent results may move directly to the “II” in TD2. Students who wish to take this course should check with the PEP Program office staff at their affiliated universities before registering for it.
- When registering for courses which are for TD3 or higher, those who are required to take QE re-examination must pass QE beforehand (except for students who transferred to TD3 and students who transferred to TD2 in September [April entry]).

(2) PEP specialized elective courses

[Note]

- Program students whose affiliated institution is not Waseda University should check the specialized elective courses of their affiliated universities.
- Be sure to check the syllabus regarding the language of instruction for each course.

(I) Research guidance (common to both master's and doctoral programs)

Major	Course title
Applied Mechanics and Aerospace Engineering	Research on Fluid Engineering
Applied Mechanics and Aerospace Engineering	Research on Dynamics and Control of Mechanical Systems
Applied Mechanics and Aerospace Engineering	Research on Energy and Systems Engineering
Applied Mechanics and Aerospace Engineering	Research on Micro and Nano Mechanics
Electric and Physical Systems	Research on Molecular Nano-engineering
Electric and Physical Systems	Research on Nano Materials Informatics
Electric and Physical Systems	Research on Integrated System Design
Electric and Physical Systems	Research on Radio and Optical Converged Systems
Electric and Physical Systems	Research on BioMicrosystem
Earth Sciences, Resources and Environmental Engineering	Research on Environmental Purification and Resources Processing
Earth Sciences, Resources and Environmental Engineering	Research on Environmental Life Cycle Assessment
Earth Sciences, Resources and Environmental Engineering	Research on Environmental Resources Remediation Engineering
Applied Chemistry	Research on Inorganic Synthetic Chemistry
Applied Chemistry	Research on Polymer Chemistry
Applied Chemistry	Research on Catalytic Chemistry
Applied Chemistry	Research on Applied Biochemistry
Applied Chemistry	Research on Applied Electrochemistry
Applied Chemistry	Research on Functional Surface Chemistry
Applied Chemistry	Research on Chemical Engineering
Applied Chemistry	Research on Synthetic Organic Chemistry
Applied Chemistry	Research on Energy Materials
Applied Chemistry	Research on Photofunctional Control Chemistry
Electrical Engineering and Bioscience	Research on Computer Aided Electromagnetics
Electrical Engineering and Bioscience	Research on Optical Properties of Condensed Matter
Electrical Engineering and Bioscience	Research on Electronic and Photonic Materials
Electrical Engineering and Bioscience	Research on Quantum Materials Science
Electrical Engineering and Bioscience	Research on Semiconductor Engineering
Electrical Engineering and Bioscience	Research on Next-Generation Electrical Energy Systems
Electrical Engineering and Bioscience	Research on Bioinformatics
Electrical Engineering and Bioscience	Research on Synthetic Biology
Electrical Engineering and Bioscience	Research on Electromobility system
Nano Science and Engineering	Research on Nanomaterials Informatics
Nano Science and Engineering	Research on Surface Chemistry of Nanostructured Materials
Nano Science and Engineering	Research on Electrochemical Nano-Systems
Nano Science and Engineering	Research on Nano-Chiral Science
Nano Science and Engineering	Research on Polymer Chemistry
Advanced Science and Engineering	Research on Physics and Applied Physics A
Advanced Science and Engineering	Research on Physics and Applied Physics B
Advanced Science and Engineering	Research on Chemistry and Biochemistry
Advanced Science and Engineering	Research on Applied Chemistry A
Advanced Science and Engineering	Research on Applied Chemistry B
Advanced Science and Engineering	Research on Life Science and Medical Bioscience
Advanced Science and Engineering	Research on Electrical Engineering and Bioscience A
Advanced Science and Engineering	Research on Electrical Engineering and Bioscience B
Environment and Energy Engineering	Environment and Power System A
Environment and Energy Engineering	Environment and Power System B
Environment and Energy Engineering	Environment and Power System C
Environment and Energy Engineering	Environment and Power System D
Environment and Energy Engineering	Environment and Power System E
Environment and Energy Engineering	Environment and Power System F
Environment and Energy Engineering	Environmental and Exergy Engineering Research A

Major	Course title
Environment and Energy Engineering	Environmental and Exergy Engineering Research B
Environment and Energy Engineering	Environmental and Exergy Engineering Research C
Environment and Energy Engineering	Environmental and Exergy Engineering Research D
Environment and Energy Engineering	Environmental and Exergy Engineering Research E
Environment and Energy Engineering	Environmental and Exergy Engineering Research F
Environment and Energy Engineering	Energy and Sustainable System for Environment A
Environment and Energy Engineering	Energy and Sustainable System for Environment B
Environment and Energy Engineering	Energy and Sustainable System for Environment C
Environment and Energy Engineering	Energy and Sustainable System for Environment D
Environment and Energy Engineering	Energy and Sustainable System for Environment E
Environment and Energy Engineering	Energy and Sustainable System for Environment F

(II) Lecture courses

Note: All courses can be taken as PEP specialized elective courses regardless of the student's affiliated department.
Duplicate enrollment of the same course title or the same content in effect is not allowed.

* : Course title in the English-based Graduate Program in Science and Engineering (EBSE)

Major	Course title	Term	Credits
Applied Mechanics and Aerospace Engineering	Micro-mechanical Engineering	fall semester	2
Applied Mechanics and Aerospace Engineering	Advanced Dynamics and Control of Mechanical Systems	fall semester	2
Applied Mechanics and Aerospace Engineering	Advanced Energy and Systems Engineering	fall semester	2
Applied Mechanics and Aerospace Engineering	Advanced fluid machinery	fall semester	2
Electric and Physical Systems	Topics on Photonics	spring semester	2
Electric and Physical Systems	Introduction to Molecular Nano-engineering	fall semester	2
Electric and Physical Systems	Energy Electronics	spring semester	2
Electric and Physical Systems	System LSI design and CAD	fall semester	2
Electric and Physical Systems	Physics and Engineering of Semiconductor Nano Devices	fall semester	2
Electric and Physical Systems	Ultra-Large-Scale-Integration (ULSI) technology	spring semester	2
Electric and Physical Systems	MicroNanoBiotechnology	fall semester	2
Earth Sciences, Resources and Environmental Engineering	Advanced Raw-Materials Science	spring semester	2
Earth Sciences, Resources and Environmental Engineering	Advanced Applied Mineralogy	spring semester	2
Earth Sciences, Resources and Environmental Engineering	Geochemistry of Mineral Resources	spring semester	2
Earth Sciences, Resources and Environmental Engineering	Physical Chemistry of Separation Technology	fall semester	2
Earth Sciences, Resources and Environmental Engineering	Environment Study of Ecological System	fall semester	2
Earth Sciences, Resources and Environmental Engineering	Advanced Aquatic Chemistry Advanced Topics in Aquatic Chemistry＊	fall semester	2
Earth Sciences, Resources and Environmental Engineering	Special Topics in Materials Science and Engineering	spring semester	2
Earth Sciences, Resources and Environmental Engineering	Numerical Simulation and Modeling for Resources Processing	fall semester	2
Earth Sciences, Resources and Environmental Engineering	Advanced Environmental Interface Engineering	fall semester	2
Earth Sciences, Resources and Environmental Engineering	Extractive Metallurgy	spring semester	2
Earth Sciences, Resources and Environmental Engineering	Advanced Topics in Atmospheric Science	spring semester	2
Earth Sciences, Resources and Environmental Engineering	Material instrumental analysis evaluation	spring semester	2
Earth Sciences, Resources and Environmental Engineering	Practice & International Cooperation in Environmental Study	an intensive course(spring)	2
Earth Sciences, Resources and Environmental Engineering	Advanced Lecture of Powder Processing	an intensive course(spring)	2
Earth Sciences, Resources and Environmental Engineering	Environmental life cycle assessment	fall semester	2
Earth Sciences, Resources and Environmental Engineering	Analytical Methodology for Geoscience α	fall semester	2
Earth Sciences, Resources and Environmental Engineering	Analytical Methodology for Geoscience β	fall semester	2
Earth Sciences, Resources and Environmental Engineering	Material Instrumental Analysis Evaluation B	fall semester	2
Earth Sciences, Resources and Environmental Engineering	Introduction to Battery Engineering: Exploring the Future of Japan's Battery Industry	spring semester	2
Applied Chemistry	Advanced Inorganic Chemistry	spring semester	2
Applied Chemistry	Advanced Organic Chemistry A	spring semester	2
Applied Chemistry	Advanced Organic Chemistry B	spring semester	2

Major	Course title	Term	Credits
Applied Chemistry	Advanced Physical Chemistry A	spring semester	2
Applied Chemistry	Advanced Physical Chemistry B	spring semester	2
Applied Chemistry	Advanced Chemical Engineering A	spring semester	2
Applied Chemistry	Advanced Chemical Engineering B	spring semester	2
Applied Chemistry	Advanced Biochemistry	spring semester	2
Applied Chemistry	Intellectual property	an intensive course(fall)	1
Applied Chemistry	Chemical Risk Management	fall quarter	1
Applied Chemistry	Innovative Science and Technology for Society	an intensive course(spring)	1
Applied Chemistry	Management of Technology for Advanced Science and Engineering	fall semester	2
Applied Chemistry	Practical English for Chemistry	spring semester	2
Applied Chemistry	Inorganic Instrumental Analysis	fall semester	2
Applied Chemistry	Nanospace Chemistry	winter quarter	1
Applied Chemistry	Hybrid Materials Chemistry	fall quarter	1
Applied Chemistry	Advanced Physical Chemistry of Polymeric Materials	fall quarter	1
Applied Chemistry	Advanced Biopolymer Chemistry	winter quarter	1
Applied Chemistry	Functional Polymers	winter quarter	1
Applied Chemistry	Chemistry of Catalytic Processes	spring quarter	1
Applied Chemistry	Catalytic Reaction Engineering	fall quarter	1
Applied Chemistry	Advanced Catalysis A	spring semester	2
Applied Chemistry	Advanced Catalysis B	fall semester	2
Applied Chemistry	Advanced Biotechnology	spring semester	2
Applied Chemistry	Advanced Microbial Biotechnology	spring semester	2
Applied Chemistry	Separation Process Engineering	fall quarter	1
Applied Chemistry	Process Dynamics	an intensive course(spring)	2
Applied Chemistry	Chemical Engineering Research A	fall semester	2
Applied Chemistry	Chemical Engineering Research B	an intensive course(fall)	2
Applied Chemistry	Industrial Process Chemistry	spring semester	2
Applied Chemistry	Advanced Synthetic Organic Chemistry	summer quarter	1
Applied Chemistry	Advanced Bio-Organic Chemistry	spring quarter	1
Applied Chemistry	Advanced Organometallic Reaction	winter quarter	1
Applied Chemistry	Applied Electrochemistry A	fall quarter	1
Applied Chemistry	Applied Electrochemistry B	winter quarter	1
Applied Chemistry	Natural Product Synthesis	fall quarter	1
Applied Chemistry	Frontiers of Energy Resource and Petroleum Technology	fall semester	2
Applied Chemistry	Advanced Material Process Engineering	fall semester	2
Applied Chemistry	Joint Seminar on nano-scale science	spring quarter	1
Applied Chemistry	Joint Seminar on materials design science	spring quarter	1
Applied Chemistry	Assessment and Design of Chemical Technologies I	an intensive course(fall)	2
Applied Chemistry	Assessment and Design of Chemical Technologies II	an intensive course(spring)	2
Applied Chemistry	Advanced Energy Materials A	fall quarter	1
Applied Chemistry	Advanced Energy Materials B	winter quarter	1
Applied Chemistry	Materials Informatics α	fall quarter	1
Applied Chemistry	Materials Informatics β	an intensive course(fall)	1
Applied Chemistry	Functions Control Tectonics	fall semester	2
Electrical Engineering and Bioscience	Advanced Numerical Analysis	spring semester	2
Electrical Engineering and Bioscience	Optical properties of matters	spring semester	2
Electrical Engineering and Bioscience	Information-based Learning	spring semester	2
Electrical Engineering and Bioscience	Modeling and Control	spring semester	2
Electrical Engineering and Bioscience	Design Biology	fall semester	2
Electrical Engineering and Bioscience	Topics on Probabilistic Information Processing	spring semester	2
Electrical Engineering and Bioscience	Electronic and photonic materials	fall semester	2
Electrical Engineering and Bioscience	Quantum Materials Science	spring semester	2
Electrical Engineering and Bioscience	Alternative Energy and Photovoltaics	an intensive course(spring)	2
Electrical Engineering and Bioscience	Advanced Electrical Energy Systems	fall semester	2
Electrical Engineering and Bioscience	Advanced Semiconductor Engineering	fall semester	2

Major	Course title	Term	Credits
Electrical Engineering and Bioscience	Topics on Bioinformatics	spring semester	2
Electrical Engineering and Bioscience	Topics on Molecular Sensors and Devices	spring semester	2
Electrical Engineering and Bioscience	Advanced Power Electronics	fall semester	2
Electrical Engineering and Bioscience	Control System Design	fall semester	2
Nano Science and Engineering	Integrative Nano-Science and Nano-Engineering	spring semester	2
Nano Science and Engineering	Introduction to Molecular Nano-engineering Molecular Nanoengineering＊	fall semester	2
Nano Science and Engineering	Advanced Physical Chemistry A	spring semester	2
Nano Science and Engineering	Advanced Physical Chemistry B	spring semester	2
Nano Science and Engineering	Nanomaterial Analysis	fall semester	2
Nano Science and Engineering	Nanochemistry	winter quarter	1
Nano Science and Engineering	Advanced Nanochemical Systems Nanochemical Systems＊	fall quarter	1
Nano Science and Engineering	Nanospace Chemistry	winter quarter	1
Nano Science and Engineering	Advanced Nano-Electrochemistry	spring semester	2
Nano Science and Engineering	Introduction to Nano-Chiral Science	an intensive course(spring)	2
Nano Science and Engineering	Nano-Properties of Polymer Materials	fall quarter	1
Nano Science and Engineering	Energy Electronics	spring semester	2
Advanced Science and Engineering	Energy Next Problem-Solving Practice	spring semester	2
Advanced Science and Engineering	Energy Next Systems and Devices	spring semester	2
Advanced Science and Engineering	Materials Informatics α	fall quarter	1
Advanced Science and Engineering	Materials Informatics β	an intensive course(fall)	1
Environment and Energy Engineering	Advanced Topics in Thermal Energy Conversion Engineering	Fall semester	2
Environment and Energy Engineering	Advanced Topics in Thermal Energy and Reaction Engineering	Spring semester	2
Environment and Energy Engineering	Environmental and Exergy Engineering	Spring semester	2
Environment and Energy Engineering	Energy and Sustainable System for Environment	Spring semester	2
Environment and Energy Engineering	Environment and Energy Business Practical Lecture	Fall semester	2
Environment and Energy Engineering	Business strategy of sustainable company	Fall semester	2
Environment and Energy Engineering	Frontiers of Energy Resource and Petroleum Technology	Fall semester	2
Environment and Energy Engineering	Automobile Engineering A	Spring semester	2

(III) Seminars

＊ : Course title in the English-based Graduate Program in Science and Engineering (EBSE)

Major	Course title	Term	Credits
Applied Mechanics and Aerospace Engineering	Seminar on Dynamics and Control of Mechanical Systems A	spring semester	3
Applied Mechanics and Aerospace Engineering	Seminar on Dynamics and Control of Mechanical Systems B	fall semester	3
Applied Mechanics and Aerospace Engineering	Seminar on Dynamics and Control of Mechanical Systems C	spring semester	3
Applied Mechanics and Aerospace Engineering	Seminar on Dynamics and Control of Mechanical Systems D	fall semester	3
Applied Mechanics and Aerospace Engineering	Seminar on Energy and Systems Engineering A	spring semester	3
Applied Mechanics and Aerospace Engineering	Seminar on Energy and Systems Engineering B	fall semester	3
Applied Mechanics and Aerospace Engineering	Seminar on Energy and Systems Engineering C	spring semester	3
Applied Mechanics and Aerospace Engineering	Seminar on Energy and Systems Engineering D	fall semester	3
Applied Mechanics and Aerospace Engineering	Seminar on Fluid machinery A	spring semester	3
Applied Mechanics and Aerospace Engineering	Seminar on Fluid machinery B	fall semester	3
Applied Mechanics and Aerospace Engineering	Seminar on Fluid machinery C	spring semester	3
Applied Mechanics and Aerospace Engineering	Seminar on Fluid machinery D	fall semester	3
Applied Mechanics and Aerospace Engineering	Seminar on Micro and Nano Mechanics A	spring semester	3

Major	Course title	Term	Credits
Applied Mechanics and Aerospace Engineering	Seminar on Micro and Nano Mechanics B	fall semester	3
Applied Mechanics and Aerospace Engineering	Seminar on Micro and Nano Mechanics C	spring semester	3
Applied Mechanics and Aerospace Engineering	Seminar on Micro and Nano Mechanics D	fall semester	3
Electric and Physical Systems	Seminar on Molecular Nano-engineering A	spring semester	3
Electric and Physical Systems	Seminar on Molecular Nano-engineering B	fall semester	3
Electric and Physical Systems	Seminar on Molecular Nano-engineering C	spring semester	3
Electric and Physical Systems	Seminar on Molecular Nano-engineering D	fall semester	3
Electric and Physical Systems	Seminar on Nano Materials Informatics A	spring semester	3
Electric and Physical Systems	Seminar on Nano Materials Informatics B	fall semester	3
Electric and Physical Systems	Seminar on Nano Materials Informatics C	spring semester	3
Electric and Physical Systems	Seminar on Nano Materials Informatics D	fall semester	3
Electric and Physical Systems	Seminar on Integrated System Design A	spring semester	3
Electric and Physical Systems	Seminar on Integrated System Design B	fall semester	3
Electric and Physical Systems	Seminar on Integrated System Design C	spring semester	3
Electric and Physical Systems	Seminar on Integrated System Design D	fall semester	3
Electric and Physical Systems	Seminar on Radio and Optical Converged Systems A	spring semester	3
Electric and Physical Systems	Seminar on Radio and Optical Converged Systems B	fall semester	3
Electric and Physical Systems	Seminar on Radio and Optical Converged Systems C	spring semester	3
Electric and Physical Systems	Seminar on Radio and Optical Converged Systems D	fall semester	3
Electric and Physical Systems	Seminar on BioMicrosystem A	spring semester	3
Electric and Physical Systems	Seminar on BioMicrosystem B	fall semester	3
Electric and Physical Systems	Seminar on BioMicrosystem C	spring semester	3
Electric and Physical Systems	Seminar on BioMicrosystem D	fall semester	3
Earth Sciences, Resources and Environmental Engineering	Seminar on Environmental Purification and Resources Processing A	spring semester	3
Earth Sciences, Resources and Environmental Engineering	Seminar on Environmental Purification and Resources Processing B	fall semester	3
Earth Sciences, Resources and Environmental Engineering	Seminar on Environmental Purification and Resources Processing C	spring semester	3
Earth Sciences, Resources and Environmental Engineering	Seminar on Environmental Purification and Resources Processing D	fall semester	3
Earth Sciences, Resources and Environmental Engineering	Seminar on Environmental Life Cycle Assessment A	spring semester	3
Earth Sciences, Resources and Environmental Engineering	Seminar on Environmental Life Cycle Assessment B	fall semester	3
Earth Sciences, Resources and Environmental Engineering	Seminar on Environmental Life Cycle Assessment C	spring semester	3
Earth Sciences, Resources and Environmental Engineering	Seminar on Environmental Life Cycle Assessment D	fall semester	3
Earth Sciences, Resources and Environmental Engineering	Seminar on Environmental Resources Remediation Engineering A	spring semester	3
Earth Sciences, Resources and Environmental Engineering	Seminar on Environmental Resources Remediation Engineering B	fall semester	3
Earth Sciences, Resources and Environmental Engineering	Seminar on Environmental Resources Remediation Engineering C	spring semester	3
Earth Sciences, Resources and Environmental Engineering	Seminar on Environmental Resources Remediation Engineering D	fall semester	3
Applied Chemistry	Seminar and Laboratory Course on Applied Chemistry A	spring semester	3
Applied Chemistry	Seminar and Laboratory Course on Applied Chemistry B	fall semester	3
Applied Chemistry	Seminar on Inorganic Reaction Mechanisms A	spring semester	3
Applied Chemistry	Seminar on Inorganic Reaction Mechanisms B	fall semester	3
Applied Chemistry	Inorganic Solid-State Chemistry A:Seminar Seminar on Inorganic Solid State Chemistry A＊	spring semester	3
Applied Chemistry	Inorganic Solid-State Chemistry B:Seminar Seminar on Inorganic Solid State Chemistry B＊	fall semester	3
Applied Chemistry	Inorganic Materials Chemistry A:Seminar Seminar on Inorganic Materials Chemistry A＊	spring semester	3
Applied Chemistry	Inorganic Materials Chemistry B:Seminar Seminar on Inorganic Materials Chemistry B＊	fall semester	3
Applied Chemistry	Seminar on Hybrid Materials Chemistry A	spring semester	3
Applied Chemistry	Seminar on Hybrid Materials Chemistry B	fall semester	3
Applied Chemistry	Seminar on Physical Chemistry of Polymers A	spring semester	3
Applied Chemistry	Seminar on Physical Chemistry of Polymers B	fall semester	3
Applied Chemistry	Seminar on Polymer Materials A	spring semester	3
Applied Chemistry	Seminar on Polymer Materials B	fall semester	3
Applied Chemistry	Seminar on Polymer Synthesis A	spring semester	3
Applied Chemistry	Seminar on Polymer Synthesis B	fall semester	3
Applied Chemistry	Seminar on Biopolymers A	spring semester	3
Applied Chemistry	Seminar on Biopolymers B	fall semester	3

Major	Course title	Term	Credits
Applied Chemistry	Seminar on Catalytic Processes A	spring semester	3
Applied Chemistry	Seminar on Catalytic Processes B	fall semester	3
Applied Chemistry	Seminar on Energy and Fuel A	spring semester	3
Applied Chemistry	Seminar on Energy and Fuel B	fall semester	3
Applied Chemistry	Seminar on Catalytic Chemistry A	spring semester	3
Applied Chemistry	Seminar on Catalytic Chemistry B	fall semester	3
Applied Chemistry	Seminar on Organic Catalytic Reactions A	spring semester	3
Applied Chemistry	Seminar on Organic Catalytic Reactions B	fall semester	3
Applied Chemistry	Seminar on Biochemical Mechanics A	spring semester	3
Applied Chemistry	Seminar on Biochemical Mechanics B	fall semester	3
Applied Chemistry	Seminar on Applied Biochemistry A	spring semester	3
Applied Chemistry	Seminar on Applied Biochemistry B	fall semester	3
Applied Chemistry	Seminar on Applied Bioscience A	spring semester	3
Applied Chemistry	Seminar on Applied Bioscience B	fall semester	3
Applied Chemistry	Seminar on Genetic Engineering A	spring semester	3
Applied Chemistry	Seminar on Genetic Engineering B	fall semester	3
Applied Chemistry	Seminar on Reaction Engineering A	spring semester	3
Applied Chemistry	Seminar on Reaction Engineering B	fall semester	3
Applied Chemistry	Seminar on Chemical Process Engineering A	spring semester	3
Applied Chemistry	Seminar on Chemical Process Engineering B	fall semester	3
Applied Chemistry	Seminar on Separation Engineering A	spring semester	3
Applied Chemistry	Seminar on Separation Engineering B	fall semester	3
Applied Chemistry	Seminar on Synthetic Organic Chemistry A	spring semester	3
Applied Chemistry	Seminar on Synthetic Organic Chemistry B	fall semester	3
Applied Chemistry	Seminar on Bioactive Substances Science A	spring semester	3
Applied Chemistry	Seminar on Bioactive Substances Science B	fall semester	3
Applied Chemistry	Seminar on Advanced Molecular Design A	spring semester	3
Applied Chemistry	Seminar on Advanced Molecular Design B	fall semester	3
Applied Chemistry	Seminar on Advanced Molecular Synthesis A	spring semester	3
Applied Chemistry	Seminar on Advanced Molecular Synthesis B	fall semester	3
Applied Chemistry	Seminar on Electronic Materials Chemistry A	spring semester	3
Applied Chemistry	Seminar on Electronic Materials Chemistry B	fall semester	3
Applied Chemistry	Seminar on Applied Physical Chemistry A	spring semester	3
Applied Chemistry	Seminar on Applied Physical Chemistry B	fall semester	3
Applied Chemistry	Seminar on Physical Electrochemistry A	spring semester	3
Applied Chemistry	Seminar on Physical Electrochemistry B	fall semester	3
Applied Chemistry	Seminar on Functional Surface Chemistry A	spring semester	3
Applied Chemistry	Seminar on Functional Surface Chemistry B	fall semester	3
Applied Chemistry	Seminar on Material Process Engineering A	spring semester	3
Applied Chemistry	Seminar on Material Process Engineering B	fall semester	3
Applied Chemistry	Seminar on Energy Materials A	spring semester	3
Applied Chemistry	Seminar on Energy Materials B	fall semester	3
Applied Chemistry	Seminar on Energy Physical Chemistry A	spring semester	3
Applied Chemistry	Seminar on Energy Physical Chemistry B	fall semester	3
Applied Chemistry	Seminar on Functions Assembly Chemistry A	spring semester	3
Applied Chemistry	Seminar on Functions Assembly Chemistry B	fall semester	3
Applied Chemistry	Seminar on Photofunctional Control Chemistry A	spring semester	3
Applied Chemistry	Seminar on Photofunctional Control Chemistry B	fall semester	3
Applied Chemistry	Seminar on Energy Process Engineering A	spring semester	3
Applied Chemistry	Seminar on Energy Process Engineering B	fall semester	3
Applied Chemistry	Seminar on Hydrogen Energy Engineering A	spring semester	3
Applied Chemistry	Seminar on Hydrogen Energy Engineering B	fall semester	3
Applied Chemistry	Practical Chemical Wisdom: Seminar I	spring semester	1
Applied Chemistry	Practical Chemical Wisdom: Seminar II	spring semester	1
Electrical Engineering and Bioscience	Advanced Seminar A	spring semester	1
Electrical Engineering and Bioscience	Advanced Seminar B	fall semester	1
Electrical Engineering and Bioscience	Seminar on Computer-Aided Electromagnetics A	spring semester	3
Electrical Engineering and Bioscience	Seminar on Computer-Aided Electromagnetics B	fall semester	3
Electrical Engineering and Bioscience	Seminar on Computer-Aided Electromagnetics C	spring semester	3
Electrical Engineering and Bioscience	Seminar on Computer-Aided Electromagnetics D	fall semester	3
Electrical Engineering and Bioscience	Seminar on Optical Properties of Condensed Matter A	spring semester	3

Major	Course title	Term	Credits
Electrical Engineering and Bioscience	Seminar on Optical Properties of Condensed Matter B	fall semester	3
Electrical Engineering and Bioscience	Seminar on Optical Properties of Condensed Matter C	spring semester	3
Electrical Engineering and Bioscience	Seminar on Optical Properties of Condensed Matter D	fall semester	3
Electrical Engineering and Bioscience	Seminar on Electronic and Photonic Materials A	spring semester	3
Electrical Engineering and Bioscience	Seminar on Electronic and Photonic Materials B	fall semester	3
Electrical Engineering and Bioscience	Seminar on Electronic and Photonic Materials C	spring semester	3
Electrical Engineering and Bioscience	Seminar on Electronic and Photonic Materials D	fall semester	3
Electrical Engineering and Bioscience	Seminar on Quantum Materials Science A	spring semester	3
Electrical Engineering and Bioscience	Seminar on Quantum Materials Science B	fall semester	3
Electrical Engineering and Bioscience	Seminar on Quantum Materials Science C	spring semester	3
Electrical Engineering and Bioscience	Seminar on Quantum Materials Science D	fall semester	3
Electrical Engineering and Bioscience	Seminar on Semiconductor Engineering A	spring semester	3
Electrical Engineering and Bioscience	Seminar on Semiconductor Engineering B	fall semester	3
Electrical Engineering and Bioscience	Seminar on Semiconductor Engineering C	spring semester	3
Electrical Engineering and Bioscience	Seminar on Semiconductor Engineering D	fall semester	3
Electrical Engineering and Bioscience	Seminar on Next-Generation Electrical Energy Systems A	spring semester	3
Electrical Engineering and Bioscience	Seminar on Next-Generation Electrical Energy Systems B	fall semester	3
Electrical Engineering and Bioscience	Seminar on Next-Generation Electrical Energy Systems C	spring semester	3
Electrical Engineering and Bioscience	Seminar on Next-Generation Electrical Energy Systems D	fall semester	3
Electrical Engineering and Bioscience	Seminar on Bioinformatics A	spring semester	3
Electrical Engineering and Bioscience	Seminar on Bioinformatics B	fall semester	3
Electrical Engineering and Bioscience	Seminar on Bioinformatics C	spring semester	3
Electrical Engineering and Bioscience	Seminar on Bioinformatics D	fall semester	3
Electrical Engineering and Bioscience	Seminar on Synthetic Biology A	spring semester	3
Electrical Engineering and Bioscience	Seminar on Synthetic Biology B	fall semester	3
Electrical Engineering and Bioscience	Seminar on Synthetic Biology C	spring semester	3
Electrical Engineering and Bioscience	Seminar on Synthetic Biology D	fall semester	3
Electrical Engineering and Bioscience	Seminar on Electromobility system A	spring semester	3
Electrical Engineering and Bioscience	Seminar on Electromobility system B	fall semester	3
Electrical Engineering and Bioscience	Seminar on Electromobility system C	spring semester	3
Electrical Engineering and Bioscience	Seminar on Electromobility system D	fall semester	3
Nano Science and Engineering	Seminar on Nanomaterials for Informatics A	spring semester	3
Nano Science and Engineering	Seminar on Nanomaterials for Informatics B	fall semester	3
Nano Science and Engineering	Seminar on Nanomaterials for Informatics C	spring semester	3
Nano Science and Engineering	Seminar on Nanomaterials for Informatics D	fall semester	3
Nano Science and Engineering	Seminar on Nanofunctional Surface Chemistry A	spring semester	3
Nano Science and Engineering	Seminar on Nanofunctional Surface Chemistry B	fall semester	3
Nano Science and Engineering	Seminar on Nanofunctional Surface Chemistry C	spring semester	3
Nano Science and Engineering	Seminar on Nanofunctional Surface Chemistry D	fall semester	3
Nano Science and Engineering	Seminar on Nano-Electrochemistry A	spring semester	3
Nano Science and Engineering	Seminar on Nano-Electrochemistry B	fall semester	3
Nano Science and Engineering	Seminar on Nano-Electrochemistry C	spring semester	3
Nano Science and Engineering	Seminar on Nano-Electrochemistry D	fall semester	3
Nano Science and Engineering	Seminar on Nano-Chiral Science A	spring semester	3
Nano Science and Engineering	Seminar on Nano-Chiral Science B	fall semester	3
Nano Science and Engineering	Nano-Chiral Science C :Seminar Seminar on Nano-Chiral Science C＊	spring semester	3
Nano Science and Engineering	Nano-Chiral Science D :Seminar Seminar on Nano-Chiral Science D＊	fall semester	3

Major	Course title	Term	Credits
Environment and Energy Engineering	Environment and Power System A:Seminar	Spring semester	3
Environment and Energy Engineering	Environment and Power System B:Seminar	Fall semester	3
Environment and Energy Engineering	Environmental and Exergy Engineering A :Seminar	Spring semester	3
Environment and Energy Engineering	Environmental and Exergy Engineering B :Seminar	Fall semester	3
Environment and Energy Engineering	Energy and Sustainable System for EnvironmentA:Seminar	Spring semester	3
Environment and Energy Engineering	Energy and Sustainable System for EnvironmentB:Seminar	Fall semester	3
Environment and Energy Engineering	Environment and Energy Engineering A:Seminar	Fall semester	3
Environment and Energy Engineering	Advanced Environment and Energy Engineering A:Seminar	Spring semester	3
Environment and Energy Engineering	Advanced Environment and Energy Engineering B:Seminar	Fall semester	3

(3) PEP comprehensive elective courses

Note: Program students from other than Waseda University should check the comprehensive elective courses of their affiliated university.

The PEP comprehensive elective courses taken by the students at the Graduate School of Fundamental Science and Engineering, Graduate School of Creative Science and Engineering, and Graduate School of Advanced Science and Engineering are specified in 共通科目の学科目配当表 (Course List of Common Courses) of 基幹/創造/先進理工学研究科要項 (Student Handbook for Graduate School of Fundamental / Creative / Advanced Science and Engineering).

Students of the Graduate School of Environment and Energy Engineering, as is the case for students at the three Graduate Schools above, are able to take the courses offered for the master's program in 共通科目の学科目配当表 (Course List of Common Courses) of 基幹/創造/先進理工学研究科要項 (Student Handbook for Graduate School of Fundamental / Creative / Advanced Science and Engineering). For TD3 transferred students, check the details with the affiliated department.

Only for students from the departments of "Applied Chemistry" and "Nanoscience and Nanoengineering"		
Research Ethics in Applied Chemistry	Intensive (Spring)	1
Only for students from the department of "Advanced Science and Engineering"		
Laboratory Rotation A	Full year	1
Laboratory Rotation B	Full year	1
Academic Research Practice and Industrial Internship A	Full year	3
Academic Research Practice and Industrial Internship B	Full year	3
Introduction to Energy Next	Fall quarter	1

(4) Doctoral program credit system

Students must complete courses and earn credits in accordance with the regulations of their affiliated department.

6. Transfer of credits earned in advance

Note: Program students whose affiliated institution is not Waseda University should check with their affiliated university regarding this system.

If a student has completed the courses listed in (2) and (3) of Section 5 of this Program Handbook before entering or transferring to the program, the credits can be counted as credits earned in the program.

IV. PEP Program RA stipends

1. PEP Program RA stipends

Program students participating in a joint research project with partner institutions or companies are eligible to receive PEP Program RA (Research Assistant) stipends via their principal advisor (the principal investigator of the project). However, eligible targets and payment amounts differ according to each university. In addition, those admitted as mature students, those who have a stable income, those who are on temporary leave, and those who have extended their program are not eligible.
For details, check with the PEP Program office staff at your affiliated university.

2. Receipt of PEP Program RA stipends

When receiving PEP Program RA stipends, students must follow the regulations of their affiliated university. Program students affiliated with Waseda University must follow the procedures and payment amounts (unit price standard) specified in Procedures for the Employment of Research Assistants (RA) and Research Support Staff in Waseda University's Research Funds Manual.

V. Student ID Number

For program students whose affiliated institution is Waseda University, a student ID number will be issued at the time of admission to the master's program/the integrated doctoral program and the doctoral program and will be used until the completion of the relevant program. For students who enter or are transferred into the program, their existing student ID number will remain the same.

	First to second digits	Third to fourth digits	Fifth digit	Sixth to Eighth digits
	Graduate school code	Year of admission	Code for major	Sequential serial number
Graduate School of Fundamental Science and Engineering	51	25	C D	001– (TD1) 501– (TD3)
Graduate School of Creative Science and Engineering	52	25	E	001– (TD1) 501– (TD3)
Graduate School of Advanced Science and Engineering	53	25	C E G	001– (TD1) 501– (TD3)
			N	501– (TD1)

	First to second digits	Third to fourth digits	Fifth to Eighth digits
	Graduate school code	Year of admission	Sequential serial number
Graduate School of Environment and Energy Engineering	54	25	0001– (TD1) 0501– (TD3)

For program students whose affiliated institution is not Waseda University, student ID numbers will be issued by the Department of Advanced Science and Engineering, Graduate School of Advanced Science and Engineering, which serves as the host institution. That student ID number will remain the same throughout the student's entire period of enrollment at Waseda University. For students who enter or transfer to the program from the second semester of the year, their student ID will be generated in or after April of the following year.

	First to second digits	Third to fourth digits	Fifth digit	Sixth to Eighth digits
	Graduate school code	Year of admission	Code for major	Sequential serial number
Program students whose affiliated institution is not Waseda University	53	25	N	951– (TD1) 851– (TD3)

VI. Handling of PEP Program in Waseda University

Waseda University students who enroll or transfer to the PEP Program from AY 2024 are also treated as students of the Nano-energy Course or Resources and Environment Course, which comprise the Carbon Neutrality Leader minor in the Graduate School. Students in this program are also able to obtain a certificate for the minor upon their completion of the program.

Course name of minor	Affiliated department
Nano-energy Course	Graduate School of Fundamental Science and Engineering (Applied Mechanics and Aerospace Engineering / Electric and Physical Systems) Graduate School of Advanced Science and Engineering (Applied Chemistry / Electrical Engineering and Bioscience / Nanoscience and Nanoengineering / Advanced Science and Engineering) Graduate School of Environment and Energy Engineering (Environment and Energy Engineering)
Resources and Environment Course	Graduate School of Creative Science and Engineering (Earth Sciences, Resources and Environmental Engineering)