For students enrolled in FY 2025

Graduate School of Frontier Science Initiative
Kanazawa University
Division of Nano Life Science
(Master's / Doctoral Program)

Guidebook

The English texts are for complementary use only.
English expressions do not change the Japanese content.

GRAFINITI
新学術創成研究科

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Ⅰ Graduate School of Frontier Science Innovative Education and Research Objectives

The aim of the program is to contribute to the creation of new academic fields by providing graduate education based on the results of interdisciplinary research that leads to the creation of innovative and new academic and industrial fields and areas, and on interaction with society, and to train researchers and industrialists who are interdisciplinary, comprehensive, and international in their approach.

II Educational Philosophy, Mission, and Graduates fostered by the Division of Nano Life Science

At Kanazawa University, we have established a doctoral course, “Division of Nano Life Science” (hereafter, this “Division”). We aim to produce doctoral graduates who will open up unexplored nanodomains by using Kanazawa University’s world-leading SPM technology to apply the dynamic observation and dynamic behavior regulation of atoms and molecules at the nano level to the fields of life and material science. In particular, building on NanoLSI’s research achievements, we will produce graduates who will work on the research and development of revolutionary nano dynamic observation technology such as high-performance SPM, and graduates who will develop cutting-edge, dynamic observation technology for research aimed at elucidating nano-level biological phenomena.

The Four Areas of Study at the Division of Nano Life Science

1. Nanometrology: Directly observing and understanding nanophenomena impossible to observe using standard microscopic technology

In the field of nanometrology, based on nanoscale live-cell imaging technology of molecular and cellular dynamics using world-class SPM technology, in subjects such as “Fundamentals of Nanoscale Measurements and Control”, “Nano Molecular Physics”, and “Nanobio-materials science”, students will enhance their knowledge of advanced nanometrological technology such as SPM technologies and fluorescence measurement technology, biomolecular mechanisms (nucleic acid, protein, fat), and the dynamic structural changes that are associated with their functional expression.

2. Supramolecular Chemistry: The design and synthesis of molecular complexes that have the possibility of being applied to probes and lead to the development of innovative nanometrological technology

In the field of supramolecular chemistry, students will enhance their knowledge of the molecular structure and functions of polymers and supramolecules in subjects such as “Synthetic Chemistry of Polymeric Materials” and Advanced Coordination Chemistry”. This is based on expertise and technology that enables the design and synthesis of highly controllable molecular complexes, including the development of columnar ring-shaped molecules, that are gaining worldwide attention.

3. Life Science: Life science research on cancer and other areas that are expected to be applied to nanometrological technology

In the field of life sciences, based on research into cancer stem cell and microenvironmental molecular target therapy that is producing outstanding results at Kanazawa University Cancer Research Institute —the only joint research center specialized on cancer in Japan—, in subjects such as “Regulation of Gene expression” and “Human Molecular biology”, students will enhance their knowledge of cancer-related molecular biology and molecular target therapy for

cancer. As a result, students will acquire a grounding to develop research that will elucidate cancer malignancy mechanisms by integrating molecular and cellular dynamics (cell differentiation and growth, stemness, signal transduction, genomic dynamics) with dynamic nanometrological technology.

4. Computational Science: Aim to perform multi-scale simulations to understand the dynamics of the atomic and molecular levels from the results of experiments obtained by measurements

In the field of computational science, students will enhance their knowledge of physical models and analytical methods for computer simulations of biomolecules in subjects such as “Computational Chemistry and Bioscience.” These subjects are taught by researchers with vast experience in complex system simulations from the biomolecular to the cell level. As a result, students will acquire a grounding in developing research to elucidate complex molecular and cellular dynamics obtained using nanoscale resolution from molecular motion by integrating multi-scale simulations that analyze the movement of materials and cells using mathematical calculations in various layers such as space and time, with nano dynamic observation technology.

Master’s Program

Type of Graduates Fostered

Graduates who have a relentless inquisitiveness and high aspirations to contribute to humanity, science, and society; have knowledge of world-leading nano dynamic observation and control; have expertise and sensitivity in the field of life and material science; have a grounding in the research of unexplored nanodomains.

Diploma Policy

Students are required to acquire the following skills through classes and various research activities in the field of Nano life science. Master’s degree (Nanoscience) will be awarded to students who are enrolled in the program for a predetermined period of time, have earned the required number of credits, and have passed the examination of the Ph.D. Qualifying Examination or Master's dissertation or research project, as well as the final examination.

1) Basic skills to conduct holistic research on Nano life science
2) Ability to develop a research plan that integrates one's own research field with other fields
3) Willingness and ability to be actively involved in unexplored interdisciplinary areas and new fields
4) Presentation, communication and documentation skills related to fundamental research fields

Curriculum Policy

The curriculum of this division is organized in the field of Nano-Life Sciences in order to achieve the academic achievement set forth in the degree awarding policy. Specifically, the master's program systematically organize their courses as follows.

1) “Core subjects” to nurture a desire to challenge unexplored areas and broaden one's view of science as a researcher.
2) “Foundation Subjects in Nano Life Science” divided into two levels - basic and specialized - to provide the basic knowledge necessary for studying the field of Nano Life Science, with an emphasis on the integration of disciplines, and enable systematic study of areas outside one's own research field.
3) “Skill Subjects” helping students acquire the basic skills necessary for research.
4) “Research Projects Subjects” developing an attitude towards science in dialogue with others through participation in interdisciplinary research and diverse research within and outside the university.
5) “Research Support Subjects” helping students discover problems in their field of study and taking enough time to develop their presentation and documentation skills.

Doctoral Program

Type of Graduates Fostered

Graduates who have a relentless inquisitiveness and high aspirations to contribute to humanity, science, and society, and who will apply the dynamic observation and dynamic behavior regulation of atoms and molecules at the nano level to the fields of life and material science, and open up unexplored nanodomains.

Diploma Policy

Students are required to acquire the following skills through classes and various research activities in the field of Nano Life Science. Doctoral degree (Nano Science) will be awarded to students who are enrolled in the program for a predetermined period of time, have earned the required number of credits, and have passed the doctoral dissertation review and final examination.

1) Ability to conduct holistic research in Nano Life Science based on one's own spirit of inquiry and interest
2) Ability to complete research by integrating one's own research field with other fields
3) Ability to explore unexplored interdisciplinary areas and new fields
4) Presentation skills, multilingual communication skills and dissertation writing skills related to most cutting-edge research

Curriculum Policy

The curriculum of this division is organized in the field of Nano Life Sciences in order to achieve the academic achievement set forth in the degree awarding policy, and offer courses with an appropriate combination of lectures, exercises, experiments, and practical training.

1) "Advanced Core Subjects" strengthening the perspectives necessary to conduct multifaceted research as a nano life science researcher.
2) "Advanced Subjects in Nano Life Sciences" deeply learning the latest findings necessary to challenge research in new areas.
3) "Advanced Skill Subjects" developing practical research skills that are essential for cutting-edge researchers.
4) "Advanced Research Projects Subjects" developing an attitude of pursuing the truth and practice as a researcher while interacting with national and international researchers during participation in interdisciplinary research and cutting-edge research within and outside the university.
5) "Advanced Research Support Subjects" helping students solve problems in their field of study and developing their research completion and presentation skills.

III List of Academic Supervisors

Please refer to the faculty members' introduction page of the Division of Nano Life Science.
https://gsinfiniti.w3.kanazawa-u.ac.jp/nano/faculty/

IV FY 2025 Academic Calendar

1st Quarter & 2nd Quarter

Week/ Month	Sun.	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.	
4	30	31	①	②	②	③	5	Q1 starts on Apr. 1.
	6	7	8	9	10	11	12	
	13	14	15	16	17	18	19	
	20	21	22	23	24	25	26	
	27	28	29	30	1	2	3	
5	4	5	6	Tue.	8	9	10	
	11	12	13	14	15	16	17	
	18	19	20	21	22	23	24	
	25	26	27	28	29	30	31	
6	1	2	3	4	④	6	7	
	8	④		11	12	13	14	Q2 starts on Jun. 11.
	15	16	17	18	19	20	21	
	22	23	24	25	26	27	28	
7	29	30	1	2	3	4	5	
	6	7	8	9	10	11	12	
	13	14	15	16	17	18	19	
	20	21	22	Mon.	24	25	26	
	27	28	29	30	31	1	2	
8	3	4	5	6	7	8	9	
	10	11	12	13	14	15	16	
	17	18	19	20	21	22	23	
	24	25	26	27	28	29	30	
9	31	1	2	3	4	5	6	
	7	8	9	10	11	12	13	
	14	15	16	17	18	19	20	
	21	22	23	24	25	⑤	27	
	28	29	30					
Class*		7.5	7.5	7.5	7.5	7.5	times	
Exam*		0.5	0.5	0.5	0.5	0.5	times	

3rd Quarter & 4th Quarter

Week/ Month	Sun.	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.	
10	28	29	30	⑥	2	3	4	Q3 starts on Oct. 1.
	5	6	7	8	9	10	11	
	12	13	14	Mon.	16	17	18	
	19	20	21	22	23	24	25	
	26	27	28	29	30	Preparations	KU Festival	
11	KU Festival	Clean up	4	5	Mon.	7	8	
	9	10	11	12	13	14	15	
	16	17	18	19	20	21	22	
	23	24	25	26	27	28	29	
	30	1	2	3	4	5	6	
12	7	8	9	10	11	12	13	Q4 starts on Dec. 8.
	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	
	28	29	30	31	1	2	3	
1	4	5	6	7	8	9	10	
	11	12	Fri.	14	15	Preparations	Common test	
	Common test	19	20	21	22	23	24	
	25	26	27	28	29	30	31	
2	1	2	3	4	5	6	7	
	8	9	10	11	TOEIC-IP		14	
	15	16	17	18	19	20	21	
	22	23	24	⑦	⑦	27	28	
3	1	2	3	4	5	6	7	
	8	9	10	11	12	13	14	
	15	16	17	18	19	⑧	21	
	22	23	24	25	26	27	28	
	29	30	31					
Class*		7.5	7.5	7.5	7.5	7.5	times	
Exam*		0.5	0.5	0.5	0.5	0.5	times	

Classes | Exams | Holidays | Summer, winter and spring holidays, No classes | No Classes Day **

①Registration Guidance
②Orientation for College Students
③Entrance Ceremony (For Degree students)
Health Check for Students Currently Enrolled (Takaramachi) Apr. 15–16
Health Check for Students Currently Enrolled (Kakuma) Apr. 18 – May 15
＃1st Quarter classes start Apr. 7
Conduct Classes for Tuesday May 7
Q1 Make-up Classes Week / 6th period on May 15–28
Face-to-Face Campus Visit in Spring (tentative) May 17
University Founding Day May 31
④Health Check for New Coming College Students
＃2nd Quarter classes start June 11
Conduct Classes for Monday July 23
Q2 Make-up Classes Week / 6th period on July 16–30
Web Campus Visit (tentative) Aug. 1–14
※Live-stereamin (tentative) Aug. 7–8
⑤Commencement Ceremony

⑥Entrance Ceremony (For Degree students)
＃3rd Quarter classes start Oct. 1
Conduct Classes for Monday Oct. 15
Kanazawa University Festival Nov. 1–2
Preparations and clean-up for KU Festival Oct. 31 ,Nov. 3
Conduct Classes for Monday Nov. 6
Q3 Make-up Classes Week / 6th period on Nov. 10–21
＃4th Quarter classes start Dec. 8
Conduct Exams for Friday Jan. 13
Preparations date for Common Test Jan. 16
Common test for University Admissions Jan. 17–18
Q4 Make-up Classes Week / 6th period on Jan. 21–Feb.3
TOEIC-IP(First Year College Student)(tentative) Feb. 12, 13
⑦KU Admission Examination
⑧Commencement Ceremony

* Class and Exam totals are per quarter.

** There may be supplementary or intensive lectures.

V [Master's Program] Course Outline

1 List of Subjects

Category			Subject Name	Year	Credit(s)		Completion Requirements
					Compulsory	Elective	
Core Subjects			Laboratory Rotation I	1	0.5		- At least four credits, including compulsory subjects, must be earned from Core Subjects. - At least one credit must be earned from※1 Subjects. - At least one credit must be earned from※2 Subjects.
			Laboratory Rotation II	1	0.5		
			Research Ethics	1	1		
			Data Science in Society 5.0 ※1	1		1	
			Advanced Science and Technology in the Next Generation※1	1		1	
			Smart Science and Technology for Innovation ※1	1		1	
			Innovation Methodology ※1	1		1	
			Mathematical, Data Science, and AI Basic※1	1		1	
			Strategy for Business and Technology Management ※2	1		1	
			MoT as for Disruptive Innovation ※2	1		1	
			Innovation in Healthcare ※2	1		1	
			Human and Social Challenges ※2	1		1	
Foundation Subjects in Nano Life Science	Basic Subjects		Basic Nano Life Sciences	1	1		
			Fundamentals of Nanoscale Measurement Technology	1	1		
			Basic Supramolecular Chemistry	1	1		
			Basic Life Sciences	1	1		
			Basic Computational Science	1	1		
	Specialized Subjects	Nanometrology	Fundamentals of Nanoscale Measurements and Control A	1・2		1	At least six credits from Foundation Subjects in Nano Life Science (Specialized Subjects), including two or more credits from nanometrology subjects, must be earned.
			Fundamentals of Nanoscale Measurements and Control B	1・2		1	
			Nano Molecular physics A	1・2		1	
			Nano Molecular physics B	1・2		1	
		Supramolecular Chemistry	Material Creation Chemistry	1・2		1	
			Synthesis of Metal Complexes	1・2		2	
			Synthetic Chemistry of Polymeric Materials	1・2		2	
		Life Science	Human Molecular biology 1	1・2		1	
			Human Molecular biology 2	1・2		1	
			Human Molecular biology 3	1・2		1	
			Human Molecular biology 4	1・2		1	
		Computational Science	Computational Chemistry and Bioscience A	1・2		1	
			Computational Chemistry and Bioscience B	1・2		1	
Skill Subjects			Research Skill Training	1～2	1		At least one credit, including compulsory subjects, must be earned from Skill Subjects.
			Wrinting Skill Training	1～2		1	
Research Projects Subjects◆			Project Training of Transdisciplinary Research [25701]	1～2	4		At least five credits, including compulsory subjects, must be earned from Research Projects Subjects.
			Project Training of Transdisciplinary Research [25702]	1・2	1		
			Internship	1・2		1	
			Off-campus Research	1・2		2	
Research Support Subjects			Creative Interdisciplinary Exercises I◆	1～2	1		Students who will compile their research as a master's thesis must earn at least eight credits from Research Support Subjects, including Master Thesis Report and compulsory subjects. Students who will compile their research as a QE must earn at least four credits from Research Support Subjects, including Research Planning for Ph.D. Program and compulsory subjects.
			Creative Interdisciplinary Exercises II◆	1～2	1		
			Creative Interdisciplinary Exercises III◆	1～2		1	
			Master Thesis Report	1～2		6	
			Research Planning for Ph.D Program	1～2		2	

Students who choose to compile their research in a master's thesis must earn at least 30 credits, and students who choose QE must earn at least 32 credits.

◆Marks are registered by the office, so students do not need to register.

2 Semesters and Class Time

The semesters, class schedules and class time are as below.

Classes will be 90 minutes, once a week. However, please be aware that there are some exceptions that are held twice a week or by semester. 1-credit quarter subjects will be concluded in eight weeks.

Semester	Class time
First semester { First quarter (eight weeks) / Second quarter (eight weeks)	First Period 08:45 - 10:15
	Second Period 10:30 - 12:00
Second semester { Third quarter (eight weeks) / Fourth quarter (eight weeks)	Third Period 13:00 - 14:30
	Fourth Period 14:45 - 16:15
	Fifth Period 16:30 - 18:00
	Sixth Period 18:15 - 19:45

3 Class Subject Structure and Categories; Credit Requirements

3.1 Core Subjects

Core Subjects are assigned in the first year to cultivate students' willingness to challenge unexplored areas as a researcher and widen their perspectives regarding science. Research Ethics (one credit), "Laboratory Rotation I" and "Laboratory Rotation II" (0.5 credit each) are offered as compulsory subjects. "Research Ethics" deals with the ethics and moral awareness demanded of those engaged in research along with the social responsibility of science. "Laboratory Rotation" exposes students directly to research that is very different from their own research and broadens their perspectives. Also, nine subjects (one credit each) are offered as elective ones.

Credit requirements for Core Subjects

・Take "Research Ethics".

・Take "Laboratory Rotation I" and "Laboratory Rotation II". "Laboratory Rotation I" will be conducted in a laboratory of a division other than your own (Category I), and "Laboratory Rotation II" will be conducted in a different laboratory within your division (Category II).

・Earn at least one credit　from the below subjects

Data Science in Society 5.0

Advanced Science and Technology in the Next Generation

Smart Science and Technology for Innovation

Innovation Methodology

Mathematical, Data Science, and AI Basic

・Earn at least one credit from the below subjects

Strategy for Business and Technology Management

MoT as for Disruptive Innovation

Innovation in Healthcare

Human and Social Challenges

3.2 Foundation Subjects in Nano Life Science (Basic Subjects)

Foundation Subjects in Nano Life Science divide the knowledge required for research into nano life science areas focusing on transdisciplinary studies into two levels, Basic Subjects and Specialized Subjects.

Basic Subjects are distributed as five compulsory subjects in the first year.

Two subjects are offered to learn the basics of nanometrology. Specifically, in “Basic Nano Life Sciences”, students learn the basics of Bio-SPM—the technology that forms the basis of nano life science. Here, students will be introduced to the basic principles of KU’s renowned Bio-SPM and other bioimaging technologies and will acquire fundamental knowledge of nano life science based on nanoscale Bio-SPM technology. In this subject, we will also cultivate students’ willingness for research on nano life science research by touching upon the development process of Bio-SPM. In “Fundamentals of Nanoscale Measurement Technology”, students learn fundamentals such as measurement in general and electrical measurements. Students will also learn the basic principles of nanometrology and application examples other than its biological application. In addition, in “Basic Supramolecular Chemistry”, students will acquire the fundamental knowledge of supramolecular chemistry, including chemical biology and NMR; in “Basic Life Sciences”, students will acquire the fundamental knowledge of life science, including cancer research; in “Basic Computational Science”, students will learn basic mathematical methods such as reasoning, simulation, and machine learning.

Credit Requirements for Foundation Subjects in Nano Life Science (Basic Subjects)

・To earn all five credits from Basic Nano Life Sciences, Fundamentals of Nanoscale Measurement Technology, Basic Supramolecular Chemistry, Basic Life Sciences, and Basic Computational Science.

3.3 Foundation Subjects in Nano Life Science (Specialized Subjects)

Based on what was learned in Basic Subjects, students will learn more specialized content from four fields in Specialized Subjects. In the master’s level section of the integrated course, we consider it important for students to be allowed to choose the knowledge required to develop the “ability to implement comprehensive research based on their inquisitiveness, curiosity, and interests.” However, it is important to take subjects systematically, without focusing disproportionately on your specialization. For this reason, we ensure that students can take an even balance of subjects by offering two to four subjects in each field. Further, it is mandatory for students to earn six credits, including two credits from the core field of nano life science, Nanometrology.

Credit Requirements for Foundation Subjects in Nano Life Science (Specialized Subjects)

・Earn at least six credits, including two or more credits from Nanometrology subjects.

3.4 Skill Subjects

For skill subjects where students can gain the fundamental skills needed to conduct research, “Research Skill Training” (one credit) is offered as a compulsory subject. Here students will gain skills for drawing up plans and giving presentations. In this subject, students will learn the following skills regarding the formulation of research plans: the skill to accurately perform experiments based on an understanding of the principles of experiments; the skill to perform accurate operations based on an understanding of the principles of apparatus used in experiments; the skill to understand the significance of experiment results; techniques to display experiment results using suitable statistical methods; methods of data gathering using databases and literature and their analytical methods; techniques for writing. The course will also deal with presentation techniques for giving presentations as a researcher at academic conferences and meetings. “Writing Skill Training” is also offered as an elective subject. In this subject, students gain a deep understanding of scientific papers, receive training on how to introduce research, and learn about expressions in Japanese and English required to write academic papers.

Credit requirements for Skill Subjects

・Earn at least one credit, including Research Skill Training.

3.5 Research Projects Subjects

In Research Projects Subjects, where students acquire a science-oriented mindset while communicating with others, “Project Training of Transdisciplinary Research” (four credits) and “Project Training of Transdisciplinary Research” (one credit) are offered as compulsory subjects. In “Project Training of Transdisciplinary Research”, students participate in the research of the Nano Life Science Institute. Students will cultivate the ability to conduct research, design research, and the willingness and ability to actively engage in unexplored interdisciplinary areas and emerging fields. Also, in, Project Training of Transdisciplinary Research, students will participate in transdisciplinary research projects. Through this, we aim to increase students’ willingness to conduct research and to acquire skills.

For “Internship”, credits will be approved for a two-week or longer internship authorized by the Graduate School. For “Off-Campus Research”, credits will be approved for a two-week or longer research training at a university other than KU or a research institution. In either case, students must inform the Graduate School Affairs Section one month before the start of their internship or training.

Credit requirements for Research Projects Subjects

・Earn at least five credits, including Project Training of Transdisciplinary Research and Project Training of Transdisciplinary Research.

3.6 Research Support Subjects

Students can choose either Master’s Thesis or Qualifying Examination as a way of compiling their master’s research. Research Support Subjects are offered in the first and second year to support students compile their research. In these subjects, students discover issues related to their research field and cultivate their ability to design research, presentation ability, and writing ability.

“Creative Interdisciplinary Exercises I” and “Creative Interdisciplinary Exercises II” (both one credits), where students receive guidance from secondary supervisors, are offered as compulsory subjects. In this Division, two secondary supervisors—including one supervisor from a different field—, are allocated, and students receive guidance from each. Specifically, students receive research guidance from two secondary supervisors as a standard twice a year. Also, “Master Thesis Report” (six credits) and “Research Planning for Ph.D. Program” (two credits) are offered as compulsory elective subjects (of which students choose one) to support students’ approach to the final compilation of their research. In “Master Thesis Report”, under the principal academic advisor’s supervision, students decide their research theme and compile their master’s thesis while incorporating new knowledge and research techniques acquired through attending seminars and exercises of different research fields held by secondary research supervisors. Students who go on to Doctoral Level Section of the Integrated Course and choose “Research Planning for Ph.D. Program” will seek to compile, submit, and present a doctoral thesis in the future. Therefore, they will learn to collect data and related articles along with learning techniques for surveys and experiments to acquire a higher level of knowledge and skills concerning their specialization and a basic grounding in related fields. Finally, they will compile a Research Planning for Ph.D. Program Report.

Credit Requirements for Research Support Subjects

*Satisfy the requirements for the chosen research compilation method.

(1) Students who chose Master’s Thesis

・Earn at least eight credits including, Master Thesis Report, Creative Interdisciplinary Exercises I, and Creative Interdisciplinary Exercises II.

(2) Students who chose Qualifying Examination

・Earn at least four credits, including Research Planning for Ph.D. Program, Creative Interdisciplinary Exercises I, and Creative Interdisciplinary Exercises II.

4 Conditions for Completion

Students must satisfy all of the below requirements for completion. Please note, after consulting with their supervisor, it is the students' responsibility to check whether they have satisfied the requirements.

(1) Students must be enrolled in the master's level section of the integrated course for at least two years. However, for students with excellent marks, enrollment for at least one year is sufficient.

(2) After receiving the necessary research guidance, students who have chosen Master's Thesis Project must have submitted a master's thesis and have passed the screening process and final test. Students who have chosen Qualifying Examination must have submitted a Application form for QE program and must have passed the Qualifying Examination.

(3) Students must obtain at least 30 credits, including credits that have been certified to meet the credit requirements in the above 3.1 to 3.6. However, students who chose Qualifying Examination to compile their research must obtain at least 32 credits.

(4) Up to 15 credits from subjects offered in other divisions may be included in the conditions for completion. However, this is limited to subjects of master's course or master's level section, which the relevant graduate school has allowed you to take.

(5) For credits gained from other graduate schools before admission and credits earned at other graduate schools, including other KU graduate schools, in addition to (4), up to 15n credits can be included in the conditions for completion when approved by the graduate school conference.

(6) As part of initiatives to improve English proficiency at KU, all students enrolled in the master's program, as a general rule, are to take an external English test during their period of study. A copy of the official score certificate taken during the period of study must be registered on the Acanthus Portal at least three months prior to the scheduled month of completion. This is a requirement for the approval of credits for "Master Thesis Report", or "Research Planning for Ph.D Program".

TOEIC（Listening & Reading Test） TOEIC（Listening & Reading IP Test）	TOEFL-iBT	TOEFL-ITP	IELTS
400	40	433	4

An external English Test may be waived in the following cases

①Students who meet the standard of achievement (TOEIC 760, TOEFL-iBT 80, TOEFL-ITP 550, IELTS 6.0 or higher, or English proficiency test "EIKEN" Grade Pre-1) and have a valid score at the time of enrollment.

*The score taken within 2 years prior to the date of admission must be registered on the Acanthus Portal.

②Native English speaker

Generally, a person who was born and raised in a country where English is an official language (see below) and has acquired English as a first language. Nationality is used as a means of determining whether a person is a native English speaker. Even if the applicant is determined to be a native English speaker, he/she can take the examination at the discretion of the supervisor.

List of countries where English is an official language

Ireland, USA, Antigua and Barbuda, United Kingdom, Israel, India, Uganda, Eritrea, Australia, Guyana, Ghana, Canada, Cameroon, Gambia, Kiribati, Cook Islands, Grenada, Kenya, Samoa, Zambia, Sierra Leone, Jamaica Singapore, Zimbabwe, Sudan, Swaziland, Seychelles, St. Kitts and Nevis, St. Vincent and the Grenadines, St. Lucia, Somaliland, Solomon Islands, Tanzania, Tuvalu, Dominica, Trinidad and Tobago, Tonga, Nigeria, Nauru Namibia, Niue, New Zealand, Pakistan, Vanuatu, Bahamas, Papua New Guinea, Palau, Barbados, Fiji, Philippines, Belize, Botswana, Marshall Islands, Malawi, Malta, Federated States of Micronesia, South Africa, South Sudan, Mauritius, Liberia, Rwanda, Lesotho

(7) It is recommended that master's theses (including Problem study) be written in a foreign language, but exceptions may be made in special circumstances. If exceptions are made, a separate document in English describing the contents of the thesis (short paper: 400-800 words for a master's thesis, no more than 2 pages with figures and tables) must be prepared and attached to the thesis. It is acceptable to submit an abstract of the thesis in Japanese even when the above document is attached.

5 Early Completion System

Students who have made outstanding research results during their period of study may shorten their enrollment period and complete their studies early.

The criteria for early completion are as follows. Those who wish to apply for early completion must apply to the Graduate School Affairs Section at least one month before to the degree application for which early completion is desired.

①Students must earn compulsory credits except for Research Support Subjects provided in the conditions for completion immediately prior to the semester (quarter) you wish to complete the course, and must be expected to fulfill the credit acquisition requirements by the time of completion of the degree.

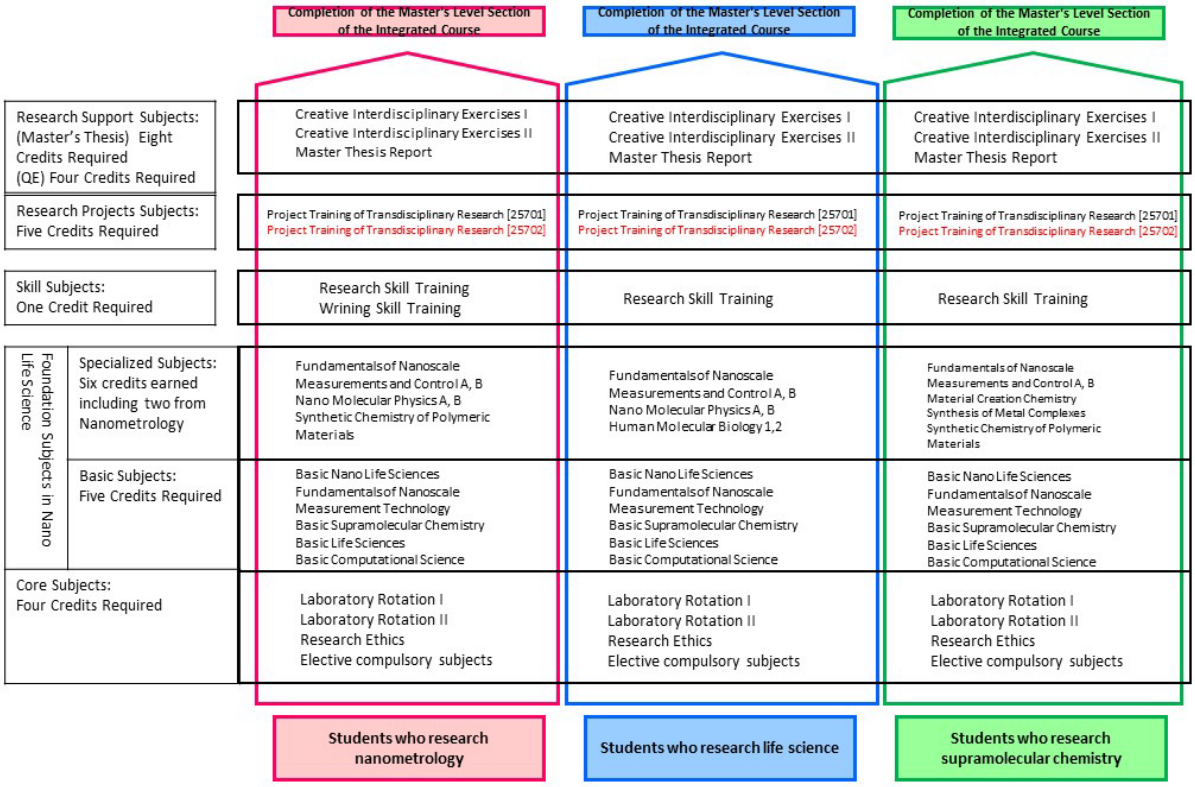
②More than one peer-reviewed academic paper (the paper must be published in a journal listed in Scopus), which was submitted while in the Master's Course, must be published or accepted for publication at least three months before the month you wish to complete the course. The student must be the first author or a responsible author for the paper.

6 Long-term enrollment system

This system allows students who have difficulty completing their studies within the standard years of study due to occupational or other reasons to complete a course of study systematically beyond the standard years of study.

Please note that if you wish to apply for a degree after shortening the period of study, you must complete the shortening procedure in advance (approximately 7 months before you wish to complete the course).

7 Course Completion Examples



8 Class Registration and Notification of Grades

8.1 Class Registration

Class registration is carried out online. For more information, please refer to Handbook for students.

If you wish to take subjects outside of this Division, first, please complete the necessary items on the "Application for other divisions' courses" (The form can be downloaded from the Graduate School Web site.). Next, get approval to the request from your class instructor and supervisor, and then submit the request to the Graduate School Affairs Section within the period designated by the KU Graduate School (once per quarter).

See below for registration schedule and timetable.

https://gsinfiniti.w3.kanazawa-u.ac.jp/student/

"Graduate school' website" → "To Student" → "Nano Life Science"

8.2 Grade Notification

Grade notification will be carried out online.

8.3 Syllabus

The syllabus will be published on the KU website.

VI [Master's Program] Education and Research Guidance Framework

As the first stage of the system for education and research guidance, in April of the first year, students will be assigned to the laboratory of the supervisor requested at the application. The second supervisors will be decided shortly afterward. As a result, this ensures a system where academic staff work together to conduct research guidance and provide detail-oriented guidance for each student.

1 Supervisor

Supervisors take on the primary role in providing education and research guidance for their students. This includes guidance on taking classes related to their student's research theme, research, and thesis writing. They focus on the guidance of their students in cooperation with second supervisors.

2 Second Supervisor

Second supervisors cooperate with supervisors and give guidance and advice from different perspectives so that their student's research can integrate multiple scientific fields.

3 Advisor

Advisor's areas of specialization differ from that of supervisors and second supervisors who are directly involved in research guidance. Advisors provide advice, consultation and early detection of problems to students regarding the progress of research and the research environment as a whole the entire research guidance environment(including student life). After being notified of the decision of advisors, students should contact them directly and have interview twice a year (around June and November).

4 Research plan

Under the guidance of supervisors, students formulate research theme, research objectives, research content, research schedule from admission to degree completion and courses of study for each academic year.

1. Immediately after admission, students are required to prepare a research plan from admission to completion on the Research Plan (Form 1), receive a research guidance plan from supervisors, and decide on the plan after consultation supervisors. The research plan (Form 1) must be kept mutually by supervisors and students.
2. Students need to report the progress of the research regularly to supervisors, and revise the research plan prepared in 1. as necessary after consultation with supervisors.
3. At the beginning of each academic year, students must prepare a course and research plan (Form 2) in accordance with the research plan (Form 1) and submit it to supervisors.

Research Plan Form https://gsinfiniti.w3.kanazawa-u.ac.jp/student/

Ⅶ [Master's Program] Degree Awarding

1 Degree Application

After obtaining the approval of their supervisor, students who are predicted to meet the conditions for completion (excluding Research Support Subjects) and will apply for academic degree conferral are to submit the Academic Degree Application Form and required documentation to the Graduate School Affairs Section.

The Academic Degree Application Form's submission date will be specified by KU three months before the month of expected course completion.

2 Master’s Thesis Submission

After obtaining the approval of their supervisor, degree applicants who chose Master’s Thesis are to submit their Master’s Thesis to the Graduate School Affairs Section by a date specified by KU.

Degree applicants that chose Research Planning for Ph.D. Program will be informed separately.

3 Final Presentation

A final presentation session will be held in February of the second year to screen degree-seeking theses. Also, the final presentation session will be open to full-time faculty from other divisions and students.

4 Academic Thesis Screening Process

The screening committee for the screening of degree-seeking theses screening will consist of at least three members. During the screening process, grading will be conducted after carefully considering the evaluation and opinions given at the final presentation.

5 Conferral of Academic Degrees

The conferral of academic degrees will be discussed at the graduate school conference, taking into consideration the above degree-seeking thesis screening results. At the graduate school conference, based on results of the academic degree screening process and the evaluation and opinions the student was awarded at the final presentation, discussions will be held from the perspective of:

1) Basic ability to conduct comprehensive research concerning nano life science
2) The ability to formulate a research plan that integrates your research field with other fields
3) The willingness and ability to actively engage in unexplored interdisciplinary areas and emerging fields
4) Presentation, communication, and writing abilities related to fundamental research fields

With this result, after necessary deliberation at the graduate school conference, we will confer academic degrees.

6 Degree to be conferred

Master’s degree (Nanoscience)

7 Qualifying Examination

Students who will go on to the Doctoral Program are permitted to complete the master’s Program by Qualifying Examination (QE) instead of a master’s thesis. The details of which will be notified separately.

For the schedule common to master's thesis students, including laboratory assignments, please refer to the next section, "8 Schedule Leading up to Degree Obtainment”.

8 Schedule Leading up to Degree Obtainment

Below is the typical schedule for students who entered in April and chose the Master’s Thesis Project and will complete it in two years. Students who chose the Qualifying Examination will be informed separately. As only the main items are listed below, please check the Graduate School website regarding specific dates and items that are not listed.

In the case of students entering in October, it will be approximately six months later.

Month	First Year (Year-round: Take class subjects)	Second Year (Year-round: Take class subjects)
April	・Assigned to a laboratory *Assigned to supervisor's laboratory ・Confirmation of second supervisors ・Take Core Subjects *Taken between the first and third quarter (estimate)	
May	・Make a Research Plan ・Confirmation of Advisor	
June		・Midterm Presentation ・Application for QE ・Application for Degree（QE）
September		・Written examination, Oral examination (QE) * Pass/fail decision for QE * In case of failure, it can be changed to submission of master's thesis.
December		*Complete the followings ・Registration of English Score ・Internship/Off-campus Research ・Submission of Academic Degree Application Form (excluding QE selectors)
January		・Submission of Master's Thesis
February		・Final Presentation Session ・Screening of Master's Thesis
March	・Choose Master's Thesis or Research Planning for Ph.D. Program as a research completion method	・Degree conferment

VIII [Doctoral Program] Course Outline

1 List of Subjects

Category		Subject Name	Year	Credit(s)		Completion Requirements
				Compulsory	Elective	
Advanced Core Subjects		Basic Nano Life Sciences※1	1		1	- At least three credits from Advanced Core Subjects, including compulsory subjects, must be earned. -※1 Students who have not completed the Master's course in this department are encouraged to take this course. - At least one credit must be earned from ※ 2Subjects.
		Advanced nano life science	1	1		
		Research Ethics for Ph.D. Researchers	1	1		
		Unleashing the Potential of Innovation for Future ※2	1		1	
		Mathematical, Data Science, and AIAdvanced ※2	1		1	
Advanced Subjects in Nano Life Science	Nanometrology	Advanced Nanoscale Measurement Technology	1・2・3		1	At least four credits must be earned from Advanced Subjects in Nano Life Science.
		Nanobio-materials science	1・2・3		1	
		Nanobio-metrology	1・2・3		1	
		Structure and dynamics of biological molecules	1・2・3		1	
		Functional dynamics of biological molecules	1・2・3		1	
		Advanced Electrochemical Measurement	1・2・3		2	
		Bioenergetics	1・2・3		1	
	Supramolecular Chemistry	Advanced Coordination Chemistry	1・2・3		2	
		Precision Macromolecular Synthesis	1・2・3		2	
	Life Science	Molecular and Cellular Biology	1・2・3		1	
		Radiation Biology	1・2・3		1	
		Regulation of Gene expression	1・2・3		2	
	Computational Science	Simulating Scanning Probe Microscopy	1・2・3		2	
		Biomaterial Mechanics & Computational Mechanics	1・2・3		2	
Advanced Skill Subjects◆		Ph.D Skill Training	1・2	1		
Advanced Research Projects Subjects◆		Project Training of Transdisciplinary Research	1・2	1		−At least two credits, including compulsory subjects, must be earned from Advanced Research Projects Subjects. - At least one credit must be earned from the subjects indicated in ※3.
		Overseas Research A ※3	1・2		1	
		Overseas Research B ※3	1・2		2	
		Overseas Research C ※3	1・2		4	
		Internship ※3	1・2		1	
		Off-campus Research ※3	1・2		2	
		Cooperative Education through Research Internships	1・2		2	
Advanced Research Support Subjects		Advanced Interdisciplinary Exercises I◆	1～3	2		At least ten credits, including compulsory subjects, must be earned from Advanced Research Support Subjects.
		Advanced Interdisciplinary Exercises II◆	1～3	2		
		Advanced Interdisciplinary Exercises III◆	1～3		1	
		Doctoral Thesis Report	1～3	6		

At least 20 credits must be earned.

◆Marks are registered by the office, so students do not need to register.

2 Class Subject Structure and Categories; Credit Requirements

2.1 Advanced Core Subjects

The objective of Advanced Core Subjects is to strengthen the perspective necessary to conduct comprehensive research as a nano life science researcher. In the first year, “Research Ethics for Ph.D Researchers” (one credit) and “Advanced nano life science” (one credit) will be offered as a compulsory subject. This subject will deal with: Conducting research that is trusted by society; the moral awareness and ethics required to be independent as a researcher; social responsibility of science, and research expenses. Also, Basic Nano Life Sciences is offered for students who will study nano life science from the Doctoral Level Section of the Integrated Course to acquire the basic knowledge that will form the foundation of nano life science based on nanoscale Bio-SPM technology. *Not required for students who have completed the Master's course in this department.

Credit requirements for Advanced Core Subjects

- At least three credits must be earned.
- Take “Research Ethics for Ph.D Researchers” and “Advanced nano life science”.
- Earn at least one credit from the below subjects

  Unleashing the Potential of Innovation for Future

  Mathematical, Data Science, and AI Advanced

2.2 Advanced Subjects in Nano Life Sciences

Advanced Subjects in Nano Life Sciences are positioned as high-level specialized subjects of a higher level than the foundational nano life sciences subjects of the Master’s Level Section of the Integrated Course, Basic Subjects, and Specialized Subjects. So that students can study the latest academic trends necessary to conduct cutting-edge nano life science research, fields of study include nanometrology, supramolecular chemistry, life sciences, and computational science. Also, two to five subjects are offered in each field so that students acquire the latest knowledge required to attempt research in emerging areas.

Credit Requirements for Advanced Subjects in Nano Life Sciences

- At least four credits must be earned.

2.3 Advanced Skill Subjects

“Ph.D. Skill Training” (one credit) is offered as a compulsory subject for Advanced Skill Subjects where students acquire practical research techniques, essential for cutting-edge researchers. When formulating a research plan, students will learn how to: gather and analyze information from databases and literature; discover issues based on this analysis; formulate and write up a research plan to solve these issues. Students will also learn skills as a researcher, such as techniques related to science communication, such as techniques for giving presentations at academic conferences and meetings, and management methods for project research that are necessary for completing research.

Credit Requirements for Advanced Skill Subjects

- Earn at least one credit, including Ph.D. Skill Training

2.4 Advanced Research Projects Subjects

Advanced Research Projects Subjects are where students acquire a mindset for pursuing the truth and gain practical experience as a researcher while communicating with foreign and domestic researchers. Here, “Project Training of Transdisciplinary Research” (one credit) is offered as a compulsory subject. In this subject, through participating in joint

research projects with external researchers, we seek to improve students' analysis techniques and communication ability. We also seek to have students construct a research network that focuses on the perception of their research and the development of future joint research projects.

Also, if students have conducted external research training, credits will be certified as below, depending on their training duration and location. Students who wish to do external training must inform the Graduate School Affairs Section one month before their training begins. Please note that for the training, five days will be seen as one week of training, and eight hours will be seen as one day of training. Time spent traveling or participating in academic conferences are not included in the training duration.

1. Overseas Research A: Research training for one to two weeks at an overseas university or research institution.
2. Overseas Research B: Research training for two weeks to one month at an overseas university or research institution.
3. Overseas Research C: Research training for one month or more at an overseas university or research institution.
4. Internship: An internship for two weeks or more at a overseas corporation or global's.
5. Off-Campus Research: Research training for two weeks or more at a domestic university or research institution.
6. Job-type Research Internship: Long-term, paid internship

*Students should consult with a supervisor as early as possible, and it is preferable to conduct this program in the first or second year. Due to the required documents and necessary procedures, students should apply to the Graduate School Affairs Section at least one month before of the start for the practical training.

Credit Requirements for Advanced Research Projects Subjects
・Earn at two credits, including Project Training of Transdisciplinary Research.
・Complete any one of "Overseas Research A", "Overseas Research B", "Overseas Research C", "Internship" and "Off-Campus Research".

2.5 Advanced Research Support Subjects

In Advanced Research Support Subjects, students solve problems related to their research field, cultivate presentation abilities, and the ability to complete research. Here, Advanced Interdisciplinary Exercises I, Advanced Interdisciplinary Exercises II (both two credits), and Doctoral Thesis Report (six credits) are offered as compulsory subjects. In Advanced Interdisciplinary Exercises I and Advanced Interdisciplinary Exercises II, under the guidance and advice of their secondary research supervisor, students learn approaches from other fields for their research theme and further develop their knowledge of their main theme through research, discussion, and study. Specifically, students receive research guidance from two secondary supervisors as a standard twice a year. And, luncheon seminars are held in the second and third years, where students present their own research and answer questions about it. In Doctoral Thesis Report, under their principal academic advisor's supervision, students compile and improve the quality of their doctoral thesis based on research outcomes and the knowledge of nanometrology, supramolecular chemistry, life science, and computational science acquired up until now—including the Master's Level Section of the Integrated Course. They also receive guidance on writing theses in English.

Credit Requirements for Advanced Research Support Subjects
・Earn at least ten credits, including Advanced Interdisciplinary Exercises I, Advanced Interdisciplinary Exercises II, and Doctoral Thesis Report.

3 Conditions for Completion

Students must satisfy all of the below requirements for completion. Please note, after consulting with their supervisor, it is the students' responsibility to check whether they have satisfied the requirements.

(1) As a general rule, students must be enrolled in the Doctoral Level Section of the Integrated Course for at least three

years.

(2) After receiving the required research guidance, students must submit a doctoral thesis and pass the screening and final test.

(3) Students must obtain at least 20 credits, including credits that have been certified to meet the credit requirements in the above 3.1 to 3.5.

(4) For courses held at other KU divisions, up to 15 credits may be included in the conditions for completion. For example, if you have obtained credits from subjects held by your supervisor for another graduate school, a maximum of 15 of these credits can be included in the conditions for completion. However, this is limited to subjects of doctoral course or the Doctoral Level Section of the Integrated Course, which the relevant graduate school has allowed you to take.

(5) For credits gained from other graduate schools before admission and credits earned at other graduate schools, including other KU graduate schools, in addition to the credits earned at (4), up to 15 credits can be included in the conditions for completion when approved by the graduate school conference.

(6) As part of initiatives to improve English proficiency at KU, all students enrolled in the doctoral program, as a general rule, are to take an external English test during their period of study. A copy of the official score certificate taken during the period of study must be registered on the Acanthus Portal at least three months prior to the scheduled month of completion. This is a requirement for the approval of credits for "Doctoral Thesis Report".

TOEIC（Listening & Reading Test） TOEIC（Listening & Reading IP Test）	TOEFL-iBT	TOEFL-ITP	IELTS
450	46	453	4

An external English Test may be waived in the following cases

①Students who meet the standard of achievement (TOEIC 760, TOEFL-iBT 80, TOEFL-ITP 550, IELTS 6.0 or higher, or English proficiency test ”EIKEN” Grade Pre-1) and have a valid score at the time of enrollment.

*The score taken within 2 years prior to the date of admission must be registered on the Acanthus Portal.

②Native English speaker

Generally, a person who was born and raised in a country where English is an official language (see below) and has acquired English as a first language. Nationality is used as a means of determining whether a person is a native English speaker. Even if the applicant is determined to be a native English speaker, he/she can take the examination at the discretion of the supervisor.

List of countries where English is an official language

Ireland, USA, Antigua and Barbuda, United Kingdom, Israel, India, Uganda, Eritrea, Australia, Guyana, Ghana, Canada, Cameroon, Gambia, Kiribati, Cook Islands, Grenada, Kenya, Samoa, Zambia, Sierra Leone, Jamaica Singapore, Zimbabwe, Sudan, Swaziland, Seychelles, St. Kitts and Nevis, St. Vincent and the Grenadines, St. Lucia, Somaliland, Solomon Islands, Tanzania, Tuvalu, Dominica, Trinidad and Tobago, Tonga, Nigeria, Nauru Namibia, Niue, New Zealand, Pakistan, Vanuatu, Bahamas, Papua New Guinea, Palau, Barbados, Fiji, Philippines, Belize, Botswana, Marshall Islands, Malawi, Malta, Federated States of Micronesia, South Africa, South Sudan, Mauritius, Liberia, Rwanda, Lesotho

(7) It is recommended that doctoral theses be written in a foreign language, but exceptions may be made in special circumstances. If exceptions are made, a separate document in English describing the contents of the thesis (short paper: 1,000-2,000 words for a doctoral thesis, no more than 4 pages with figures and tables) must be prepared and attached to the thesis. It is acceptable to submit an abstract of the thesis in Japanese even when the above document is attached.

4 Early Completion System

Students who have made outstanding research results during their period of study may shorten their enrollment period and complete their studies early.

The criteria for early completion are as follows. Those who wish to apply for early completion must apply to the Graduate School Affairs Section at least one month before to the degree application for which early completion is desired.

①In principle, students must earn credits except for Advanced Research Support Subjects provided in the conditions for completion immediately prior to the semester (quarter) you wish to complete the course.

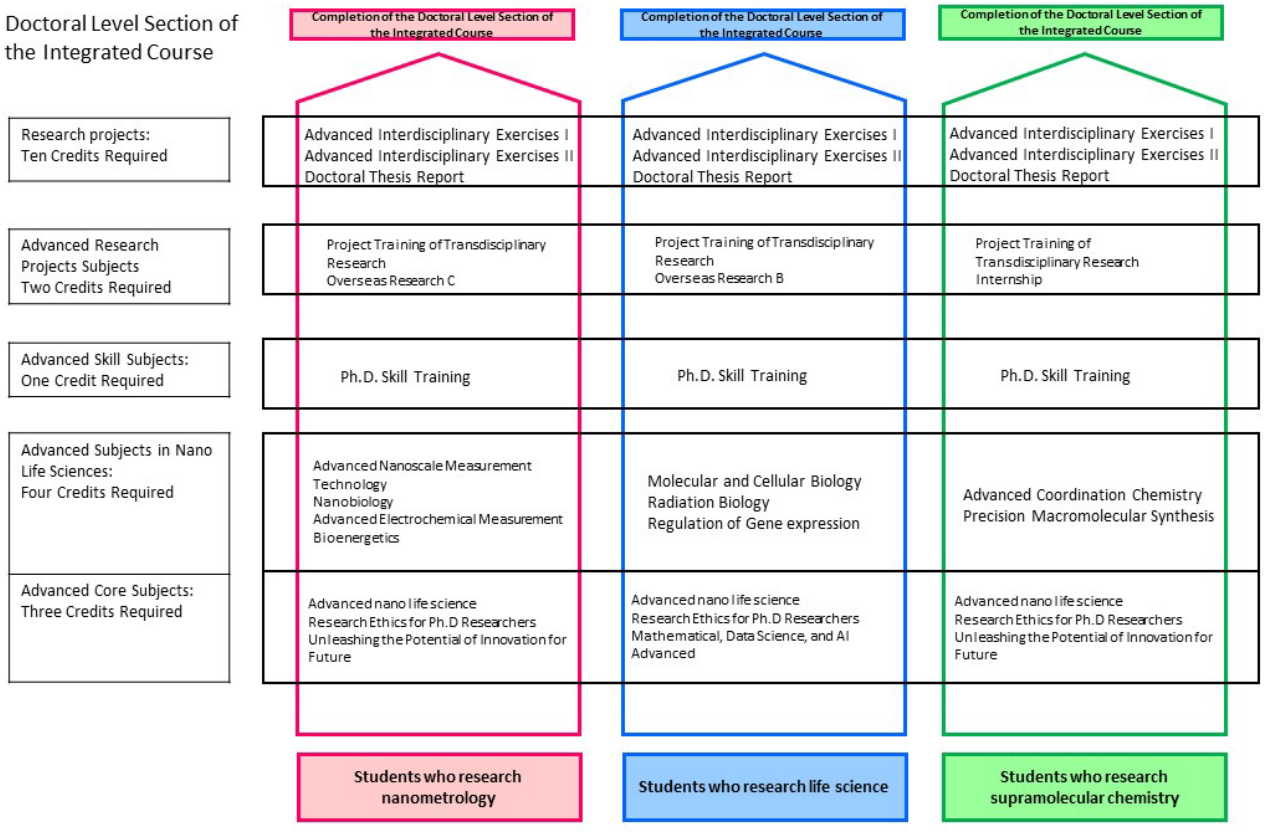
②More than two peer-reviewed academic paper (the paper must be published in a journal listed in Scopus), which was submitted while in the Doctoral Course, must be published or accepted for publication at least three months before the month you wish to complete the course. The student must be the first author or a responsible author for the paper.

5 Long-term enrollment system

This system allows students who have difficulty completing their studies within the standard years of study due to occupational or other reasons to complete a course of study systematically beyond the standard years of study.

Please note that if you wish to apply for a degree after shortening the period of study, you must complete the shortening procedure in advance (approximately 7 months before you wish to complete the course).

6 Course Completion Examples



7 Class Registration and Notification of Grades

7.1 Class Registration

Class registration is carried out online. The details of which you will be notified separately.

If you wish to take subjects outside of this Division, first, please complete the necessary items on the “Application for other divisions' courses” (The form can be downloaded from the Graduate School Web site.). Next, get approval to the request from your class instructor and supervisor, and then submit the request to the Graduate School Affairs Section within the period designated by the KU Graduate School (once per quarter).

Refer to the following URL for course schedule.

https://gsinfiniti.w3.kanazawa-u.ac.jp/student/

“Graduate School of Frontier Science Initiative’ website” → “to Students” → “Nano Life Science”

7.2 Grade Notification

Grade notification will take place online.

7.3 Syllabus

The syllabus will be published on the KU website.

8 Overseas Research, Internship, Off-Campus Research

8.1 Class Subjects

Overseas Research A: Research training for one to two weeks at an overseas university or research institution. (1 credit)

Overseas Research B: Research training for two weeks to one month at an overseas university or research institution. (2 credits)

Overseas Research C: Research training for one month or more at an overseas university or research institution. (4 credits)

Internship: An internship for two weeks or more at a overseas corporation or global’s. (1 credit)

Off-Campus Research: Research training for two weeks or more at a domestic university or research institution. (2 credits)

Job-type Research Internship: Long-term, paid internship. (2 credits)

8.2 Period

- Not specified. However, we recommend that students consult with a supervisor as early as possible, and attend your practice during the holidays of their first and second year (especially during summer vacation).
- Students must complete the practice three months before their third-year expected month of completion degree application at the latest and must submit the report.
- In principle, the practice should be conducted in person, not online. However, if you wish to do so for unavoidable reasons, please confirm with your supervisor and the Graduate School Affairs Section.

8.3 Duration

- As a general rule, at one place, it should be set one week as five days and one day as eight hours.
- Time for travel and presenting at academic conferences, and days which training are not conducted, should be not included in the duration.

8.4 Location

Over Research, Off-Campus Research

- Universities (excluding your own), research institutions, institutes, test facilities, or equivalent institutions

Internships

・Overseas companies, global companies, etc.

8.5 How to Find a Place to do your practice

・From the employment support information of the Graduate School of Frontier Sciences

Acanthus Portal>LMS Course>Graduate School of Frontier Sciences Employment Support

・From company and job information websites

・From the list of available institutions on the KU Career Support Office

https://career-support.adm.kanazawa-u.ac.jp/internship

・From the list of host companies on the KU science and engineering internship website

https://www.se.kanazawa-u.ac.jp/gakunai/internship/index.html

*However, negotiations will be necessary for accepting students at the listed companies, so please consult with the Graduate School Affairs Section.

・Introduction from Supervisors

8.6 Notification and Feedback

As you must be evaluated by the practice provider, it is necessary to ask that they complete a feedback sheet. Once the place of internship has been decided, students are to submit the **"Pledge and Notification of internship" and "Planning of Off-campus Training courses"** (available to download from the graduate school website) to the Graduate School Affairs Section at least one month before the start of the practice. After that, the Graduate School Affairs Section will request the completion of a feedback sheet by e-mail to the practice provider.

Also, the feedback sheet will be provided to the student as a feedback score later.

8.7 Preliminary Practice (Required)

Students who will attend practice must watch the Career Support Office's "Internship Guidance"(Japanese) and "Business Manners"(English) videos as prior training.

Acanthus Portal>Education & Learning>LMS Course>Career Support Office

8.8 Enrolling in Insurance Plans

Students who are not enrolled in the two below insurance plans that were compulsory at the time of admission cannot attend the practice. If you are not enrolled, please do so at your earliest convenience.

・Student education and research disaster accident insurance [Gakkensai]

・Gakkensai Incidental Liability Insurance [Incidental Liability] with PAS A Course

※For international students, the following

・Student education and research disaster accident insurance [Gakkensai]

・Inbound Comprehensive Student Life Insurance

When the practical destination is overseas (various procedures for overseas travel)

Please check the following URL and be sure to follow the necessary procedures for students traveling abroad.

KANAZAWA UNIVERSITY>Global Network>Study abroad (KU to abroad)>Overseas Risk Management and Insurance

https://www.kanazawa-u.ac.jp/global-network/studyabroad/risk-management/for-student-en/

8.9 Support for Travel Expenses

To be notified separately.

8.10 Report

Within one month after the practice, students must complete to write the “Report of Off-campus Training courses” (available to download from the graduate school website) and submit a report signed by your supervisor to the Graduate School Affairs Section.

8.11 Assessment

Students will be evaluated holistically based on the “Report of Off-campus Training courses” submitted by students and the feedback sheet submitted by their practice place.

8.12 Considerations for the practice

- You are not to withdraw from the practice once your place of internship has been decided.
- Strictly adhere to confidentiality obligations.
- Keep information obtained during your internship confidential indefinitely. Also, do not post obtained information on social media or internet forums.
- In the rare case you break or lose equipment of your place of internship, this will be covered by the insurance, so please report the matter. Also, do not keep the equipment to yourself.

8.13 Other

- You must take a separate risk management orientation if your practice place is overseas.
- Students who wish to have credits for International Internship (KU) certified, must contact the Graduate School Affairs Section .
- Even if you attend the practice that is not eligible for credit (regular course), be sure to submit the “Notification and Pledge Form for Research Study Abroad and Off-Campus Research Training” to the Graduate School Section before the training so that insurance can be applied in case of an emergency.

IX [Doctoral Program] Education and Research Guidance Framework

As the first stage of the system for education and research guidance, in April of the first year, students will be assigned to the laboratory of the supervisor requested at the application. The second supervisors will be decided shortly afterward. As a result, this ensures a system where academic staff work together to conduct research guidance and provide detail-oriented guidance for each student.

1 Supervisor

Supervisors take on the primary role in providing education and research guidance for their students. This includes guidance on taking classes related to their student's research theme, research, and thesis writing. They focus on the guidance of their students in cooperation with second supervisors.

2 Second Supervisor

Second supervisors cooperate with supervisors and give guidance and advice from different perspectives so that their student's research can integrate multiple scientific fields.

3 Advisor

Advisor's area of specialization differ from that of supervisors and second supervisors who are directly involved in research guidance. Advisors provide advice, consultation and early detection of problems to students regarding the progress of research and the research environment as a whole the entire research guidance environment (including student life). After being notified of the decision of advisors, students should contact them directly and have interview twice a year (around June and November).

4 Research plan

Under the guidance of supervisors, students formulate research theme, research objectives, research content, research schedule from admission to degree completion and courses of study for each academic year.

1. Immediately after admission, students are required to prepare a research plan from admission to completion on the Research Plan (Form 1), receive a research guidance plan from supervisors, and decide on the plan after consultation with supervisors. The research plan (Form 1) must be kept mutually by supervisors and students.

2. Students need to report the progress of the research regularly to supervisors, and revise the research plan prepared in 1. as necessary after consultation with supervisors.

3. At the beginning of each academic year, students must prepare a course and research plan (Form 2) in accordance with the research plan (Form 1) and submit it to supervisors.

Research Plan Form https://gsinfiniti.w3.kanazawa-u.ac.jp/student/

X [Doctoral Program] Degree Awarding

1 Degree Application

After obtaining the approval of their supervisor, students who are predicted to meet the conditions for completion (excluding Research Support Subjects) and will apply for academic degree conferral are to submit the Academic Degree Application Form and required documentation to the Graduate School Affairs Section.

The Academic Degree Application Form's submission date will be specified by KU two months before the month of expected course completion.

2 Doctoral Thesis Submission

After obtaining the approval of their supervisor, degree applicants are to submit their doctoral thesis to the Graduate School Affairs Section by a date specified by KU.

3 Final Presentation

A hearing and final test are held as a final screening for degree-seeking theses. At the hearing, students will present their degree-seeking thesis. Students and faculty attend the hearing to ensure the transparency and strict evaluation of the screening process. Also, a final test regarding the subjects related to the degree-seeking thesis will be held by the screening committee.

4 Academic Thesis Screening Process

The academic thesis screening process will be conducted at KU. The screening committee will consist of at least five members. During the screening process, grading will be conducted after carefully considering the evaluation and opinions given at the thesis pre-defense and final presentations.

5 Conferral of Academic Degrees

The conferral of academic degrees will be discussed at the graduate school conference, taking into consideration the above degree-seeking thesis screening results. At the graduate school conference, based on results of the academic degree screening process and the evaluation and opinions the student was awarded at the final presentation, discussions will be held from the perspective of:

1) The ability to conduct comprehensive research based on your inquisitiveness, curiosity, and interest regarding nano life science

2) The ability to complete research that integrates your research field with other fields

3) The ability to explore unexplored interdisciplinary areas and emerging fields

4) Presentation, communication, and writing abilities related to fundamental research fields

With this result, after necessary deliberation at the graduate school conference, we will confer academic degrees.

6 Degree to be conferred

Doctoral degree (NanoScience)

7 Schedule

Below is the typical schedule for students who will complete the course in three years. As only the main items are listed, please check the notices, etc. regarding specific dates and items that are not listed.

In the case of students entering in October, it will be approximately six months later.

Year	Month	Item
1	April	・Assigned to a laboratory　*Assigned to Supervisor's laboratory ・Confirmation of second Supervisors
	May	・Make a Research Plan ・Confirmation of Advisor
1～2	Year-round	・Take class subjects
1・2	November	・Presentation (Retreat ,Colloquium)
2～3	October to December	・Luncheon Seminar
3	December	*Complete the followings ・Registration of English Score ・Internship/Overseas Research/Off-campus Research
	January	・Submission of Academic Degree Application Form ・Submission of Doctoral dissertation
	February	・Final presentation session ・Screening of Doctoral dissertation
	March	・Degree conferment

XI WISE Program

The “WISE Program” is an integrated five-year doctoral program that brings together the world’s top-level education and research capabilities through systematic collaboration with domestic and international external institutions such as universities, research institutions, private companies. The program aims to take the lead in the creation and utilization of new knowledge, create value that will drive the next generation, as well as developing doctoral graduates that can pursue the solution of social issues and give rise to innovation in society (high-level “intellectual professionals”).

The WISE Program for Nano-Precision Medicine, Science, and Technology targets five types of diseases in humans: Cancer, lifestyle diseases, neurological diseases, and diseases caused by small particulates and nanomaterials. Under the outstanding research environment and results of the Nano Life Science Institute, “WPI-NanoLSI,” with its world-class research capability and researchers, the Program creates innovative disease prevention, diagnosis, and treatment through an understanding and control at the nano level. The Program also fosters the human resources that will produce the innovation required for building the people’s health foundation, which is essential to bring about Society 5.0.

Successful applicants of the Kanazawa University Graduate School who have passed the WISE Program for Nano-Precision Medicine, Science and Technology screening test can enroll in the WISE Program for Nano-precision Medicine, Science and Technology.

The credit classification for students of the Division of Transdisciplinary Sciences who take the WISE Program for Nano-Precision Medicine, Science and Technology is as follows.

■Master’s course

Name of Class Subjects	Number of Credits		Classification of Earned Credits
	Required	Elective	
Introduction to Nano Precision Medicine, Science and Engineering	1		Optional Subjects *1
Introduction to Nanoscience *2	2		-
English for Environmental and Energy Technology		1	Optional Subjects *1

*1 Up to 15 credits, including credits earned in other graduate schools, may be included in the completion criteria.

*2 Acquisition of credits for "Basic Nano Life Sciences" and "Fundamentals of Nanoscale Measurement Technology" offered by Division of Nano Life Science is considered as acquisition of credits for "Introduction to Nano Science" for WISE Program.

■Doctoral course

Name of Class Subjects	Number of Credits		Classification of Earned Credits
	Required	Elective	
Nano Science Fusion Practical exercises	1		Advanced Core Subjects *3
Preemptive Nano-Medicine		2	Advanced Core Subjects *3
Integrated Nano Neuroscience		2	Advanced Core Subjects *3
Control Methodologies for Nanomaterials in the Environment		2	Advanced Core Subjects *3
Lecture on Development of Advanced Nano-Diagnostic Method		2	Advanced Core Subjects *3
Regulatory Science		2	Advanced Core Subjects *3
Medical Innovation		2	Advanced Core Subjects *3
Practical English		2	Advanced Core Subjects *3
Seminar of Medical Innovation		2	Advanced Core Subjects *3
Basic International Communication Exercise		1	Advanced Core Subjects *3
Strategy for Business and Technology Management		1	Advanced Core Subjects *3
Innovation Methodology A		1	Advanced Core Subjects *3
Innovation Methodology B		1	Advanced Core Subjects *3

*3 Up to 15 credits, including credits earned in other graduate schools, may be included in the completion criteria.

XII Other

1 Communications from the Administration Office

Take care to not miss any communications, as communication with students will take place through the following three channels according to its content. Please note, we will not assist students who are disadvantaged because they missed communications. If you have changed the e-mail address you registered during admission, you must inform the Graduate School Affairs Section.

1. Mainly announcements from the graduate program: Notification by e-mail to the e-mail address registered during admission (change to an easy to contact address possible)
2. Information that needs to be displayed medium to long-term: Listed on the “To Students” page of the graduate school website
3. Information about events posted on other websites: Notification via Acanthus Portal

On Acanthus Portal, you can forward all notifications to your e-mail address. You can set it so that you will not miss any e-mails by configuring forwarding settings via “Set a forwarding or emergency e-mail address” within the “Settings” menu. If you have any questions regarding Acanthus Portal, please refer to the FAQ on the “Inquiries” page on Acanthus Portal or inquire using the form.

2 Student ID Card

Student ID Cards will be distributed at orientation. In addition to being proof of identity, the card has various functions, as listed below. Please handle it with care, and do not put it close to magnets or apply strong force to the card as it contains an IC chip. Also, never lend out your card, or borrow other students’ cards. If you lose or damage the card, ¥2,452 is required for reissue.

- To manage attendance for certain lectures
- As a card key to enter certain buildings
- When pre-charged and used to make payments with electronic money at the campus canteen and coop.
- When borrowing books from the library
- When taking the Annual Medical Checkup
- When issuing various certificate(s) at the automatic certificate issuing machines

In the event of loss or theft, immediately apply for the temporary suspension of the IC card on Acanthus Portal, notify the Graduate School Affairs Section and conduct reissue procedures.

Please return your student ID Card to the Student Affairs Division, Transdisciplinary Sciences Administration Department as soon as possible if you are no longer a student due to compilation or dropping out, etc.

3 Acanthus Portal and Kanazawa University ID

At KU, we operate the portal site “Acanthus Portal,” which serves many purposes such as course registration, notification of grades, and communications from the university, and also includes scheduler functions. Students will be informed of the “Kanazawa University ID” and the temporary password required for login at orientation. The “Kanazawa University ID” is a very important lifetime ID, so be sure to manage it securely. For more information, please refer to the student handbook.

4 KAINS ID and E-mail Address

At KU, registering a KAINS ID is required to obtain an e-mail address and use the Wi-Fi. Please use the below KU Information Media Center URL to register.

https://account.kains.kanazawa-u.ac.jp/

Please note that the KAINS ID obtained will be your KU e-mail address.

(For example, if your register the KAINS ID abcdefg, then your e-mail will be abcdefg@stu.kanazawa-u.ac.jp)

5 VPN Setup

By using the VPN service provided by the Information Media Center, you can use the Kanazawa University network from off-campus in the same environment as on-campus (the network ID mentioned above is required.)

By using the VPN service, you will be able to use the homepage that is available only on campus, electronic journals and article search databases provided by the University libraries (some of them are not available) even from off-campus. For more information, visit Kanazawa University Website.

https://www.emi.kanazawa-u.ac.jp/kains-vpn

6 Microsoft umbrella license

The University has an umbrella license agreement with Microsoft and Adobe to provide many software titles free of charge to students, faculty, and staff. Please refer to the Center for the Creation of Academic Media's website https://www.emi.kanazawa-u.ac.jp/services/ for the license agreement (who is eligible, how to use, etc.) before using the software at the university and use it correctly.

7 Strict Prohibition of Unauthorized Use of Software, etc.

Illegal pirated software is distributed for free or sold at low prices on the Internet. You should never use pirated software that is easily available, even if the legitimate version is expensive. Unauthorized use of software can result in criminal penalties and civil lawsuits. In recent years, there have been cases in which students at universities have been subjected to expensive penalties for unauthorized use of software.

Even if you have purchased a legitimate version of the software, unauthorized use of the software in violation of the license agreement, such as unauthorized copying or use of more than the number of licenses purchased, may result in criminal penalties and civil lawsuits.

Pirated download sites are illegal sites, and installing files downloaded from illegal sites on your PC increases the probability of malware damage such as ransomware, and increases the risk of serious damage not only to the student's PC, but also to the student's surroundings, and ultimately to Kanazawa University's information environment. This increases the risk of serious damage not only to the student's PCs, but also to the information environment of Kanazawa University.

If unauthorized use of software occurs at Kanazawa University, it will reveal a lack of compliance awareness on the part of the university's faculty, staff, and students, and will lead to a loss of social credibility, so please do not do this. Please purchase the necessary number of software licenses through proper channels, and take the utmost care to comply with copyright and license terms when using software.

8 Procedures for Leave of Absence, Reinstatement, Withdrawal, etc.

Procedures for leave of absence, withdrawal, etc. are to be taken at the home university. For students of KU, procedures should be taken at the Graduate School Affairs Section.

Students who intend to pause their studies for one month or more due to illness or other reasons can take a leave of absence, upon approval from the Dean of the Graduate School, until the end of each quater, semester or academic year.

Those who wish to be reinstated in the graduate school in the middle of their leave of absence need to submit a request for reinstatement.

When submitting a notification of absence, return, or withdrawal from school, a student must consult with their supervisor, advisor, etc., and confirm the necessary procedures with the Student Affairs Section.

9 Financial Support

For the information on KU's financial support system, refer to the following website;

https://www.kanazawa-u.ac.jp/en/students/

"Kanazawa University Website"→"Students"→"Financial support・Scholarships"

10 Various Certificates

Certificates of Student Registration, academic transcripts, and student fare discount certificates are issued by the home university. At KU, some certificates can be issued with the automatic issuing machines installed at 9 locations on campus (such as student fare discount certificates, academic transcripts, etc.,) while others require application at the graduate school affairs section. (such as scholarship certificate, certificate of enrollment in GAKKENSAI insurance, etc.) For more information, refer to the handbook for students and KU Website.

11 Using Parking Lots

When commuting to the university by car, please follow traffic rules and please take good care to drive safely. Parking permits must be presented when parking on the campus. Those who wish to receive a parking permit should apply online during the application periods in early April and early October. Applicants who meet the screening criteria will be issued a parking permit valid until the end of the relevant academic year. To be issued a parking permit, applicants must take a traffic safety lecture on Webclass and have the necessary documents checked. Before applying, please read through the detailed procedures, which are available through bulletins and notifications.

A temporary parking permit with short validity period may be issued in exceptional circumstances. Please contact the Student Affairs Division, Transdisciplinary Sciences Administration Department for details.

Parking without a parking permit or parking in areas other than designated parking lots will result in a parking violation warning. Repeated warnings will result in the installation of a parking violation pole. Malicious parking violations will also be subject to penalties.

▪12 Procedures

The point of contact for various procedures for students of the Graduate School of Frontier Science Initiative is the Graduate School Affairs Section, Student Affairs Division, Transdisciplinary Sciences Administration Department (1st floor, Natural Science and Technology Main Hall).

TEL　076-264-5971　　E-mail　s-yugo@adm.kanazawa-u.ac.jp

▪13 Report changes of address etc.

Students must enter their current address, phone number, and parent/guardian's address and phone number in the "Register information" on the Acanthus Portal. If there are any changes, please update the register data in the Acanthus Portal.

At the same time, please be sure to notify the post office, bank, etc. of any change in your current address.

Please also be sure to report changes of current address to the post office, bank, etc. Please do not use this university address as your mailing address or contact information.

新学術創成研究科規程

The information is listed below.

「Acanthus Portal」→「LMS Course (WebClass)」→

「その他情報　新学術創成研究科（共通)」(Only Japanese)

Graduate School Affairs Section, Student Affairs Division,
Transdisciplinary Science Administration Department
Kanazawa University
Kakumamachi, Kanazawa, Ishikawa Prefecture 920-1192
Tel: 076-264-5971
E-mail: s-yugo@adm.kanazawa-u.ac.jp