

**Graduate School of Innovative Life Science**

Major of Cognitive and Emotional Neuroscience  
(Ph.D. Program)

**Guidelines for Recruitment of Students** (The 2nd)

**For admission in April 2020**

General Admission

Special Admission for Persons with Disability

December 2019

**University of Toyama**

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Although recruitment of students for the Ph.D. program (for entrance in April 2020) of Cognitive and Emotional Neuroscience Major of the Graduate School of Innovative Life Science of this university is implemented twice, the second recruitment of students will be implemented based on these Guidelines for Recruitment of Students. The first recruitment students was implemented at August 2019.

## Admission Policy

### 【Admission policy】

The Graduate School of Innovative Life Science seeks students who at admission have acquired a level of specialized academic competence through a previously awarded masters or equivalent for the Ph.D. course in Cognitive and Emotional Neuroscience. Furthermore, we seek candidates to be motivated to further expand their knowledge of their specialty, desiring to develop experimental techniques in the wider research field through an active personality and with interdisciplinary interests in mind.

### 【The policy of selection of applicants (Methods of entrance examinations and evaluations)】

< General Admission >

Applicants are selected on the basis of the integrated scores of the following items; written English examination (or external English examination), oral examination, and academic transcripts. Applicants are assessed based on their academic abilities and willingness which are equivalent to those among graduates of a four-year university.

< Special Admission for Persons with Disability >

Applicants are selected on the basis of the integrated scores of the following items; written examination (essay), oral examination, and academic transcripts. Applicants are assessed based on their academic abilities and willingness which are equivalent to those among graduates of a four-year university.

## General Admission

### 1. Number of students for recruitment

Major	No. of students for recruitment	Remarks
Cognitive and Emotional Neuroscience	9	The number of students to be recruited includes Persons with Disability recruited for special admission (about 2 in the Graduate School of Innovative Life Science) , and students recruited at the first recruitment.

(Note) - Applicants must consult a tutor of the preferred major/education field in advance about the direction, etc. for education and research, etc.

- In this Graduate School, the “Special Provisions for Education Methods” specified in Article 14 of the “Standards for Establishment of Graduate Schools” are applied for paying special consideration to learning opportunities for adult students. If it is judged that there is a special educational need, education is provided using appropriate methods by offering classes or research instruction at night or another specific time or period to adult students so that they do not have to leave work.

An adult student (working person) refers to a person who works at a hospital, educational/research institute, company, etc. as an employee and keeps that position even after admission.

### 2. Qualification for application

A person who corresponds to one of the following requirements

- (1) A person who has graduated from a university (only programs that require a course of medicine, dentistry, or pharmaceutical, veterinary medicine with a 6-year course term) and a person who is expected to graduate by March 2020
- (2) A person who has received a Bachelor’s degree from the National Institution for Academic Degrees and Quality Enhancement of Higher Education based on the regulations specified in Article 104, Paragraph 7 of the School Education Act (only a person who has taken a course of medicine, dentistry, pharmaceutical, or veterinary medicine) and a person who is expected to receive a Bachelor’s degree by March 2020
- (3) A person who has completed an 18-year course of school education in another country (medical, dental, or six-year pharmaceutical, veterinary medicine college) and a person who is expected to complete the course by March 2020
- (4) A person who has completed an 18-year course of school education in a country other than Japan by taking a correspondence course of education in Japan offered by a school in that country (medical, dental, or six-year pharmaceutical, veterinary medicine college) and a person who is expected to complete the course by March 2020
- (5) A person who has completed the course of an educational institution that is positioned in Japan as a school that offers courses for a foreign university in the school education system of that country (limited to those who have completed an 18-year course of school education in that country (medical, dental, or six-year pharmaceutical, veterinary medicine college)) and a person who is expected to complete the course by March 2020
- (6) A person who have completed an educational program (limited to Medicine, Dentistry, Pharmaceutical Sciences and Veterinary Medicine) of five years or more at a university or an educational institution in a foreign country

(which has been evaluated for its educational and research activities by an institute certified by the government or its related organization, or an equivalent thereof designated by the Minister of Education, Culture, Sports, Science and Technology, Japan) (including a person who have completed a correspondence course offered by the foreign educational institution while residing in Japan, and a person who have completed an educational program at an educational institution authorized by the School Education System and designated as such by the Minister of Education, Culture, Sports, Science and Technology, Japan) and have been conferred a degree which is equivalent to a Bachelor's degree, or will be conferred said degree by March 2020

- (7) A person who is designated by the Minister of Education, Culture, Sports, Science and Technology (Announcement No. 39 of the Ministry of Education in 1955)
- [1] A person who has taken a course of medicine or dentistry in the medical or dental department of a university based on the old University Act (No. 388 of the Imperial Decree in 1918) and has graduated from the said department
  - [2] A person who has graduated from the National Defense Medical College based on the Defense Agency Establishment Act (Law No. 164 of 1954)
  - [3] A person who corresponds to any of the following and is recognized to have ability equaling or surpassing a person who has graduated from a university by taking a course of medicine, dentistry, pharmaceutical or veterinary medicine
    - a. A person who has completed a master's program (pharmacology, science, engineering, etc.) and a person who can receive a master's degree (pharmacology, science, engineering, etc.)
    - b. A person who has been enrolled on a Ph.D. program that does not have the divisions of 2-year first-term and 3-year second-term programs for more than 2 years, has completed more than 30 credits, and has received necessary research guidance (including a person who corresponds to Article 6, Item 1 of the pre-amendment Rules for Academic Degrees (No. 9 Ministerial Order from the Ministry of Education in 1953) based on the ministerial ordinance for partial amendment of the Rules for Academic Degrees (No. 29 Ministerial Order from the Ministry of Education in 1974))
    - c. A person who has engaged in research at a university, research institute, etc. for more than 2 years after graduating from a university (excluding programs to take a course of medicine, dentistry, pharmaceutical or veterinary medicine) or who has completed a 16-year course of school education in another country based on the School Education Act and has been approved by this Graduate School for Innovative Life Science based on the research achievement in the Graduate School or his or her major
- (8) A person who have been enrolled in the Doctoral Course of another Graduate School (limited to a course of four years) in accordance with the provisions of School Education Law Article 102, Paragraph 2 and have been deemed by the Graduate School to have the academic ability required to study at the Graduate School.
- (9) A person who has been recognized through the individual examination for admission qualification by this Graduate School for Innovative Life Science to have ability equaling or surpassing a person who has graduated from a university (medical, dental, or six-year pharmaceutical, veterinary medicine) and will be at least 24 years old by the time of admission, may apply.
- (10) A person who has been enrolled at a university (medical, dental, or six-year pharmaceutical, veterinary medicine) for more than 4 years (including a person who has been specified by the Minister of Education, Culture, Sports, Science and Technology to be pursuant to this) and has been recognized by this Graduate School for Innovative Life Science to have acquired the designated degree with outstanding achievements during the enrollment period

(Notes) - It is desirable that a person who corresponds to Qualification for Application (1) and has graduated from the medical or dental department obtain a license as a medical doctor or dentist.

- A person who corresponds to (6) is requested to consult with the Examination Section of the Admissions Office for Educational Affairs Division (Sugitani Campus) in advance.
- A person "designated by the Minister of Education, Culture, Sports, Science and Technology" in Qualification for Application (7) includes a person who has been recognized by the Graduate School such as a person who has completed a Master's degree. For more information, please contact the Examination Section of the Admissions Office for Educational Affairs Division (Sugitani Campus).
- A person "specified by the Minister of Education, Culture, Sports, Science and Technology" in the Qualification for Application (10) includes a person who has completed an equivalent course in another country. For more information, please contact the Examination Section of the Admissions Office for Educational Affairs Division (Sugitani Campus).
- A person who is going to apply for admission based on the Qualification for Application (7)([3] "a", is excluded), (8) ~ (10) is subject to a preliminary review of qualification for application. Please see "(4) Filing for certification of eligibility for application" of "1. Application procedures" of "Common matters."

### 3. Selection Methods

Enrolled students are selected comprehensively based on the results of written examination or external English examination (refer to “6 The use of scores on external English examination” on page 9), oral examination, and certificate of grade report.

#### (1) Written examination

Foreign language (English) (It is permitted to bring in an English-Japanese dictionary<sup>(Note)</sup>. However, electronic dictionaries and medical dictionaries are not allowed.)

(Note) If a person who is a foreign national and whose mother tongue is not “English” wants to bring in a dictionary, he or she must consult the Examination Section of the Admissions Office for Educational Affairs Division (Sugitani Campus) beforehand.

※Applicants who have submitted their official scores on any of the external English examinations may be exempted from a written examination, depending on their score.

#### (2) Oral examination

The oral examination is about subjects related to the student’s preferred major/education area.

#### (3) Date and location of examination

Date (day of the week)	Time	Subject for examination, etc.	Site for examination
March 2 (Monday), 2020	9:30~11:00	Foreign language (English)	Sugitani (medical and pharmaceutical areas) Campus, University of Toyama, 2630 Sugitani, Toyama
	13:00~	Oral examination	

## Special Admission for Persons with Disability

### 1. Purpose

This University's Graduate School of Innovative Life Science shall improve the educational and research environment that allows a person with physical disability to participate in research on health and welfare devices, medical devices, or universal design on their own initiative and carry out advanced scientific education and research that can provide human resources and technologies that respond to the super-aging society of this country. In accordance with this purpose, this Graduate School shall implement special admission for persons with disability as follows aside from general admission.

### 2. Number of students for recruitment

Major	No. of students for recruitment	Remarks
Cognitive and Emotional Neuroscience	A few	To be included in the number of students recruited for general admission (The number of students with disabilities recruited for special admission shall be about 2 persons in the Graduate School of Innovative Life Science.)

(Note) - Applicants must consult a tutor of the preferred major/education field in advance about the direction, etc. for education and research, etc.

- A person with physical disability who requires support or a person who has any questions about a responsible teacher, etc. must contact the Examination Section of the Admissions Office for Educational Affairs Division (Sugitani Campus), (TEL: 076-434-7658, FAX: 076-434-4545)

### 3. Qualification for application

A person with physical disability (Only programs that require a course of medicine, dentistry, or veterinary medicine) or a person with developmental disability (who is issued with a doctor's certificate) and corresponds to any of the following items shall be eligible. However, the person is required to be able to study and conduct research using a support device, etc.

- (1) A person who has graduated from a university (medical, dental, or six-year pharmaceutical, veterinary medicine college) and a person who is expected to graduate by March 2020
- (2) A person who have completed an educational program (limited to Medicine, Dentistry, Pharmaceutical Sciences and Veterinary Medicine) of five years or more at a university or an educational institution in a foreign country (which has been evaluated for its educational and research activities by an institute certified by the government or its related organization, or an equivalent thereof designated by the Minister of Education, Culture, Sports, Science and Technology, Japan) (including a person who have completed a correspondence course offered by the foreign educational institution while residing in Japan, and a person who have completed an educational program at an educational institution authorized by the School Education System and designated as such by the Minister of Education, Culture, Sports, Science and Technology, Japan) and have been conferred a degree which is equivalent to a Bachelor's degree, or will be conferred said degree by March 2020
- (3) A person who have been enrolled in the Doctoral Course of another Graduate School (limited to a course of four years) in accordance with the provisions of School Education Law Article 102, Paragraph 2 and have been deemed by the Graduate School to have the academic ability required to study at the Graduate School.
- (4) A person who was recognized by the Graduate School of Innovative Life Science to have the ability equal to or surpassing the person who has graduated from a university (medical, dental, or six-year pharmaceutical, veterinary medicine college) through the individual examination for admission qualification, and will be at least 24 years old by the time of admission, may apply.

(Note) • A person who corresponds to (2) is requested to consult with the Examination Section of the Admission Office for Educational Affairs Division (Sugitani Campus) in advance.

- As for certification of the eligibilities (3) or (4) for application, please see "(4) Filing for certification of eligibility for application" of "1. Application procedures" in the "Common matters."

#### 4. Selection Methods

Enrolled students are selected comprehensively based on the results of written examination or external English examination (refer to “6 The use of scores on external English examination” on page 9), oral examination, and certificate of grade report.

##### (1) Written examination

Foreign language (English) (It is permitted to bring in an English-Japanese dictionary<sup>(Note)</sup>. However, electronic dictionaries and medical dictionaries are not allowed.)

(Note) If a physically-disabled person who needs special consideration when using dictionary, or a foreign national person whose mother tongue is not “English”, wants to bring in a dictionary, he or she must consult the Examination Section of the Admissions Office for Educational Affairs Division (Sugitani Campus) beforehand.

※Applicants who have submitted their official scores on any of the external English examinations may be exempted from a written examination, depending on their score.

##### (2) Oral examination

The oral examination is about subjects related to the student’s preferred major/education area.

##### (3) Date and location of examination

Date (day of the week)	Time	Subject for examination, etc.	Site for examination
March 2 (Monday), 2020	9:30~11:00	Foreign language (English)	Sugitani (medical and pharmaceutical areas) Campus, University of Toyama, 2630 Sugitani, Toyama
	13:00~	Oral examination	

## Common matters

### 1. Application procedures

#### (1) Method of application

An applicant for admission must first **pay an “examination fee” by bank transfer** and send the application documents by **“registered/express mail”** after writing down the necessary information according to the following division on the envelop **in red**.

##### [1] Period of application

**January 14 (Tuesday), 2020 to February 13 (Thursday), 2020 (as indicated by the postmark on the envelop)**

Application documents should be mailed to:

The Examination Section of the Admissions Office for Educational Affairs Division (Sugitani Campus)  
University of Toyama  
2630 Sugitani, Toyama City, Toyama 930-0194

As for a method of payment for the “examination fee,” please see “(3) Method of payment for examination fee.”

However, if a person attending an education school (graduate course) of this University plans to continue to the Ph.D. program of the education school, he or she does not need to pay the examination fee.

##### [2] Necessary information on the envelop

“Enclosed: Application for admission to the Graduate School of Innovative Life Science (general admission to the Ph.D. program)”

“Enclosed: Application for admission to the Graduate School of Innovative Life Science (special admission for persons with disability to the Ph.D. program)”

#### (2) Application documents

	Documents, etc.	Notes
[1]	Application for admission	Please use the form designated by the University.
[2]	Certificate of (expected) graduation	It is prepared by the head (dean) of the university from which the applicant graduated. (A person who has graduated from this university does not need it.)
[3]	Certificate of (expected) completion of Master’s degree	It is prepared by the head of the university (graduate course) from which the applicant graduated. (Only a person who has completed (is expected to complete) the Graduate School’s Master program (first-term Ph.D. program))
[4]	Certificate of grade report	It is prepared and strictly sealed by the head (dean) of the university from which the applicant graduated. (All grade reports after admission to the university) It forge-proof/copy-prevention paper is used, wax-sealing of the envelope is not necessary. (A person who has completed (is expected to complete) the Graduate School’s Master program (first-term Ph.D. program) should also attach the grade report prepared and sealed by the head of the graduate course.)
[5]	Admission ticket for examination/photo card	Please use the form designated by the University, attach a photo of the applicant (4cm H × 3cm W, upper body with no hat, headshot taken within the last three months before submitting the application) to the form and fill out necessary items.
[6]	Certificate of Transferred Amount for Examination Fee	After transferring an examination fee from a financial institution using a Request Form for Transfer attached to this Guideline, please attach the “Certificate of Transferred Amount (Examination Fee)” received from the financial institution to the “Certificate of Transferred Amount for Examination Fee.” (The applicant needs to pay a service charge separately when paying the examination fee.) However, if a person attending each education school (graduate course) of this University and plans to continue the Ph.D. program of the education school, he or she does not need to pay the examination fee.
[7]	Certificate of approval for taking examination	For a person who is enrolled in the Ph.D. program of another university or a person working in a public office or company, please attach a certificate of approval for taking an examination issued by the head of the education school (graduate course) of that university or head of division to which the applicant belongs. (Please choose a form.)
[8]	Copy of the certificate of residence	For a foreigner who now lives in Japan, please attach a copy of the certificate of residence issued by the head of municipal government.
[9]	Physical disability certificate (copy), etc.	For special admission for persons with disability, a person with physical disability must attach a copy of a physical disability certificate, and a person with developmental disability must attach a doctor’s certificate.
[10]	Envelop for return	This is used for sending an admission ticket for examination. Please clearly state the postal code, address and name on the No. 3 long-format envelop (23.5cm × 12cm) and attach a 374-yen stamp to the envelop.
[11]	Address card (for mailing a notification of acceptance)	Please use the form designated by the University and fill out a postal code, address, name and its furigana in the form.
[12]	TOEFL/TOEIC score sheet (original)	Applicants who have taken any of the following examinations are requested to submit the original score sheet. (It will be returned in the reply envelope after photocopying it.) (1) TOEFL-iBT score report for the applicant (2) TOEFL-ITP score report (3) TOEIC L&R Official Score Certificate (4) TOEIC L&R-IP Score Report Only score sheets issued on or after March 2, 2018 are valid.

※Documents written in a foreign language other than English must be accompanied by documents translated into Japanese or English.



### (3) Method of payment for examination fee

Please pay the examination fee of 30,000 yen within the following period.

However, if a person corresponds to the following, he or she does not need to pay the examination fee.

- A person who is a master's student of our university and plans to continue The Ph.D. program of the graduate school.

**Payment deadline: February 13 (Thursday), 2020 (by 3:00 p.m.)**

Please pay the examination fee into the teller's account of a nearby bank, credit union, JA (Japan Agricultural Cooperatives), etc. that handles "electronic transfer" using the form designated by the University.

Please do not transfer the examination fee by ATM (automated teller machine). The transfer from the Post Bank is not accepted.

The examination fee shall not be returned to the applicant for any reason except in the following cases.

- [1] The applicant paid the examination fee, but did not apply for admission to the University of Toyama (did not submit the application documents or the application documents were not accepted)
- [2] The applicant paid the examination fee twice
- [3] The applicant paid more than the designated examination amount

(Note) If you need to claim for return of the examination fee, please be sure to attach the "Certificate of Transferred Amount (Examination Fee)" to the attached "Claim Form for Return of Examination Fee" and send it to the University of Toyama by mail.

Send to: Accounting Division of Financial Department, University of Toyama  
3190 Gofuku, Toyama City, Toyama 930-8555  
Tel: (076) 445-6053

### (4) Filing for certification of eligibility for application

A person who applies based on the "Qualification for Application (7) ([3] "a", is excluded), (8)~(10)" ("Qualification for Application (3) or (4)" in the case of special admission for persons with disability) is subject to preliminary review for qualification. Please gather the following documents and submit them to the Examination Section of the Admissions Office for Educational Affairs Division (Sugitani Campus), of the University of Toyama **by December 27 (Friday), 2019.**

- Certification Record of Eligibility for Admission Exam Application (a form designed by the University)
- Certificate of grade report of graduate school and a file diploma of the latest school
- Record of research and business achievement
- List of research paper (including conference presentation) (a form designed by the University)

Result of the review of the certification of eligibility for application will be informed to the student by January 24 (Friday), 2020

### (5) Preliminary consultation for a physically-disabled applicant (Excluding special admission for persons with disability)

Because a physically-disabled applicant may need special consideration when taking an examination or attending the university, please consult the Examination Section of the Admissions Office for Educational Affairs Division (Sugitani Campus), prior to the application.

During the consultation, we may ask the submission of a document describing the following matters and a doctor's certificate.

- Type and severity of disability
- Matters for which the applicant requests special consideration when taking an exam
- Matters for which the applicant requests special consideration when attending the university
- Situation of daily living and other matters that can be referred to

[1] Deadline for consultation: **December 27 (Friday), 2019**

[2] Contact to: the Examination Section of the Admissions Office for Educational Affairs Division (Sugitani Campus),

University of Toyama  
2630 Sugitani, Toyama City, Toyama 930-0194  
Tel: 076-434-7658

## 2. Announcement of successful applicants

The identification numbers of successful applicants shall be posted in front of the gate of the Faculty of Engineering (Gofuku Campus) and in front of the research buildings of the Faculty of Medicine and the Faculty of Pharmacy and Pharmaceutical Sciences (Sugitani Campus), University of Toyama, **at 3:00 p.m. on March 10 (Tuesday), 2020,** and successful applicants shall be notified separately.

The University will not respond to any inquiry about the passing status by phone, fax, etc.

### 3. Admission procedures

The admission procedures shall be taken as follows, but the details will be notified separately to successful applicants.

- (1) Day of admission procedures: **March 23 (Monday), 2020 (scheduled)**
- (2) Location of admission procedures: Sugitani Campus, University of Toyama
- (3) Documents, etc. necessary for admission procedures  
Notification of acceptance, applicant's photo (4 cm H×3 cm W in color), written pledge of school enrollment (a form designated by the University), etc.
- (4) Expenses required for admission procedures
  - a. Admission fee: **282,000 Japanese yen (scheduled amount)**
    - (Note) [1] The above admission fee is the scheduled amount. If the admission fee is revised at the time of admission, a new admission fee will be applicable from the time of revision.
    - [2] The paid admission fee shall not be returned for any reason.
  - b. Others
    - [1] If the payment of the admission fee and tuition is acknowledged to be difficult, the successful applicant may be exempted or payment postponed upon selection.
    - [2] The tuition shall be **paid after admission**. The amount of payment and method of payment shall be explained at the time of the admission procedures.  
<Reference> Tuition of FY2019: Annual tuition of 535,800 Japanese yen
    - [3] A scholarship program of the Japan Student Services Organization is available.
    - [4] The payment for Disaster and Accident Insurance for Students Engaged in Education and Research, etc. is required separately.

### (5) Cautions

A person who does not complete the admission procedures on the day of the admission procedures, he or she shall be handled as a person who wishes to withdraw from admission.

### 4. Protection of personal information of an applicant for admission

The personal information possessed by the University shall be handled based on the "Act on the Protection of Personal Information Held by Independent Administrative Agencies, etc." and "University of Toyama Rules for Protection of Personal Information."

- (1) The names, addresses and other personal information of applicants learned at the time of application shall be used for [1] selection of students to be enrolled (application processing, implementation of selection), [2] announcement of successful applicants, [3] admission procedures, [4] survey/study in the selection method of enrolled students, and [5] operations associated with these purposes.
- (2) Among the personal information learned at the time of application, only the information of those who completed the procedures for admission to our university shall be used for preparatory education and post-admission operations related to [1] educational instruction (school registry, attending instruction, etc.), [2] student support (health management, application for tuition waiver/scholarship, career support, etc.), [3] collection of tuition, and [4] statistical survey and data analysis.
- (3) Only the applicant ID numbers, names and addresses of successful applicants may be used for contact from the student activity groups, organizations associated with the university, alumni association, support group and co-op.  
(Note) If a successful applicant does not wish to receive any contact from the above organizations, please inform the Examination Section of the Admissions Office for Educational Affairs Division (Sugitani Campus), to that effect.
- (4) In the use of personal information for various types of operations, some of the operations may be conducted by a vendor contracted with the relevant operations from our university (hereinafter referred to as "contractor"). When contracting the operations, all or part of the personal information learned shall be provided to the contractor within the limit necessary to perform the contracted operations. We supervise the use of information to ensure compliance with confidentiality.

### 5. Cautions

- (1) If there is any defect in the application documents, the application may not be accepted.
- (2) The application documents, etc. once accepted shall not be returned for any reason.
- (3) If any fact that is different from the description in the submitted documents is found even after acceptance of admission, the admission of a successful applicant may be cancelled.
- (4) Please forward any inquiry about the application or other matters to the following address.  
The Examination Section of the Admissions Office for Educational Affairs Division (Sugitani Campus),  
University of Toyama  
2630 Sugitani, Toyama City, Toyama 930-0194  
Tel: 076-434-7658

## **6. The use of scores on external English examination**

Applicants whose score is 42 or higher for TOEFL-iBT, 439 or higher for TOEFL-ITP or 438 or higher for TOEIC, are exempted from taking a written English examination. Please submit the score sheet along with your application documents.

Scores on the TOEFL-iBT, TOEFL-ITP, TOEIC L&R, or TOEIC L&R-IP are converted into points out of 100, and used for the evaluation.

Scores can be accepted only in cases when it was issued on or after March 2, 2018.

Applicants who are not exempted from a written English examination due to their score, or who have not taken the TOEFL-iBT, TOEFL-ITP, TOEIC L&R, or TOEIC L&R-IP, must take a written English examination.

# Outline of the Ph.D. program of the University of Toyama Graduate School of Innovative Life Science

## 1. Purpose

Currently, the development of technologies and equipment in important areas such as medical care, drug discovery, and welfare centering on medicine and pharmaceutical sciences, which are closely related to human life itself, is fast evolving everyday. In fact, such development in medical and pharmaceutical areas alone is limited to the expansion of biotechnology essential for medical care, development of advanced biotechnology-based medical devices such as new drugs, protein chips and cellular chips, computational chemistry and synthetic technology necessary for drug discovery, and progress of manufacturing technology of drugs. There is a growing need for scientific education in cognitive information science, biotechnology, electronic information, and device engineering, new technology such as nano technology in the areas of science and technology, and explanation of life phenomena.

We have established the “**Graduate School of Innovative Life Science**” that combines the field of developing electronic measuring systems and precision instruments, which are necessary for medical care, the area of simulating information transmission and processing methods in the brain and nervous system and applying the advantages, the field of analyzing structures and actions of chemical compounds for drug discovery, computerizing/predicting, and synthesizing them, and the area of developing new functional materials necessary for assisting biological functions by making full use of nano technology with the medical and pharmaceutical areas based on the latest life sciences. We are aiming to develop human resources who can respond to various social needs by providing cutting-edge interdisciplinary education and research on basic studies of human life system, maintenance of health, and support through the coordination of related teachers in the faculty activities of medical science, pharmaceutical science, basic science, and engineering.

## 2. Structure and Credit Standard

### (1) Majors and course terms

[1] There are three majors in this Graduate School of Innovative Life Science (Ph.D. program): Cognitive and Emotional Neuroscience, Biological Information Systems, and Advanced Nano and Sciences.

[2] The course term for Cognitive and Emotional Neuroscience is 4 years as a standard and the course terms for Biological Information Systems and Advanced Nano and Sciences are 3 years as a standard.

### (2) Credit standard

The following table shows the credit standard of this Graduate School of Innovative Life Science (Ph.D. program).

Class subject Major	Designated optional subject (open subject of own major)		Free optional subject (including an open subject of another school for education*)	Mandatory subject		Total
	Lecture	Laboratory	Lecture	Exercise	Special research	
Cognitive and Emotional Neuroscience	10 credits or more	2 credits or more	4 credits or more	4 credits	10 credits	30 credits or more

\*Graduate School of Medicine and Pharmaceutical Sciences for Education, Graduate School of Science and Engineering for Education

### 3. Outlines of Majors

Major	Contents of major	Educational area
Cognitive and Emotional Neuroscience	<p>Recently, incidence of dementia in longevity societies and problems due to emotional and behavioral abnormalities in juveniles are increasing.</p> <p>The brain is the only organ that develops during the lifetime under the influences of various factors such as many molecules induced by genes, the antenatal environment, and the environment of the external world after birth (social environment). Abnormalities in these material processes in the brain lead to emotional and behavioral abnormalities, while these emotional and behavioral abnormalities affect these material processes and change not only the brain structure but also the physiological functions. This department aims to develop sophisticated healthcare staff and leading brain scientists who can independently deal with mental problems and emotional/behavioral abnormalities, which are rapidly becoming problematic in developed countries, by overviewing them through interdisciplinary research approaches including specialized fields of basic medicine at the molecular, cellular, and system behavior levels as well as clinical medicine and human social sciences.</p> <p>The goal of this department is to establish science for humanity (“integrated science of the heart”), and the following items are targeted:</p> <ul style="list-style-type: none"> <li>• Neuroscience-based resolution of recognition/emotion/memory</li> <li>• Neuroscience in the development of emotional and mental behavioral disorders</li> <li>• Neuroscience for the development of higher brain dysfunction and evolution in preventive care</li> <li>• Establishment of molecular biological grounds for brain development</li> <li>• Promotion of brain-scientific researches by utilizing the combined grounds of medical sciences and pharmaceutical sciences and drug discovery</li> <li>• Cross-sectoral analysis of neural information networks</li> </ul>	<ul style="list-style-type: none"> <li>• System Emotional Science</li> <li>• Molecular Brain Science</li> <li>• Molecular Neuroscience</li> <li>• Integrative Neuroscience</li> <li>• Molecular Neuropathology</li> <li>• Neuropsychiatry</li> <li>• Neurosurgery</li> <li>• Anatomy and Neuroscience</li> <li>• Behavioral Physiology</li> </ul>

### 4. List of class subjects

As attached in Appendix I

### 5. List of responsible teachers and research contents

As attached in Appendix II

### 6. Special exceptions of educational method

A person who receives special-exception education can not only take courses during the day but can also take courses and research guidance at night if he or she submits a course plan after consulting with his or her responsible teacher. The time slot for night courses and research guidance is scheduled from 18:10 to 21:20 from Mondays through Fridays in principle. However, a person eligible for special exception can take courses on Saturdays or during the summer vacation, etc. depending on the class subject.

The time slots for classes are scheduled as follows.

First period: 08:45 – 10:15	Second period: 10:30 – 12:00	Third period: 13:00-14:30
Fourth period: 14:45 – 16:15	Fifth period: 16:30 – 18:00	
Sixth period: 18:10 – 19:40	Seventh period: 19:50 – 21:20	

## **7. Conferral of academic degree**

### **○Major of Cognitive and Emotional Neuroscience**

- (1) The type of academic degree is a Ph.D. (Doctor of Philosophy in Medical Sciences).
- (2) Ph.D. (Doctor of Philosophy in Medical Sciences) degree shall be given to a person who has been enrolled in the Graduate School for more than 4 years, acquired 30 credits or more according to “(2) Credit standard” of “2. Structure and Credit Standard,” and passed the review for a doctoral dissertation and the final examination after receiving necessary research guidance. However, an academic degree may be given even if his or her enrollment period is less than 4 years, if a student who has been enrolled in the Graduate School for more than 3 years has shown outstanding research achievements and met the designated requirements.  
If a student presents his or her plan to take and complete the program systematically over a certain period beyond the standard course term (4 years) due to special circumstances such as working outside the campus, the systematic course curriculum may be accepted.

## **8. Structure of responsible teachers, etc.**

- (1) One responsible teacher and two assistant teachers shall be assigned.
- (2) Each student shall decide on a special research theme after consulting with a responsible teacher and/or an assistant teacher at the time of admission and shall carry out the research in parallel with special exercise courses until completion of the program.
- (3) One of the assistant teachers shall be selected from among teachers who belong to different faculty activities from the faculty activity (medical science, pharmaceutical science, basic science, and engineering) of the student and shall give advice beyond the conventional boundaries of the research departments of medical science, pharmaceutical science, basic science, or engineering.

**Appendix I**

**List of Class Subjects**

Major of Cognitive and Emotional Neuroscience

	Name of class subject	No. of credits		
		Mandatory	Optional	Free
Common subject	Bioethics		2	
	Advanced Life science		2	
	Entrepreneurship		2	
	Medical Design		2	
Specialized subject	Neuroscience of Emotion and Memory		2	
	Central Regulation of Behavior and Autonomic System		2	
	Signal Transduction in the Neural System		2	
	Molecular Biological Approaches to CNS Function		2	
	Cellular and System Physiology		2	
	Sensory and Cognition Systems		2	
	Brain-derived Growth Factors		2	
	Neuropathology		2	
	Mental Disorders		2	
	Biological Psychiatry		2	
	Higher Order Brain Function		2	
	Molecular and Cellular Cognition		2	
	Structure of the Central Nervous System		2	
	Functional Brain Neurosurgery		2	
	Functional Reconstruction of the Brain		2	
	Developmental Pediatrics		2	
	Correlation among the Nervous, Endocrine, and Immune Systems		2	
	Neuronal Circuit Formation		2	
	Maturation of Neuronal Circuit		2	
	Behavioral Physiology		2	
	The Scientific Writing and Presentation in English			2
	Japanese Language & Culture			2
	Training Course for Gene Expression Analysis in the CNS		1	
	Training Course for Neural Activity Recording in Animals		1	
	Practice of Neuropathology		1	
	Training course for Gene Regulation by Small RNA		1	
	Training Course for Non-invasive Neurophysiological Measurement of Brain Activity		1	
	Training Course for Non-invasive and Non-neurophysiological Measurement of Brain Activity		1	
	Training Course for Research of Physico-brain Relationship		1	
	Training Course for Diagnostics of Brain Function		1	
Training Course for Neuroanatomy and Comparative Neuroanatomy		1		
Training Course for Behavioral Physiology		1		
Special Practice in Cognitive and Emotional Neurosciences	4			
Special Research on Cognitive and Emotional Neurosciences	10			

## Appendix II

### List of Responsible Teachers and Research Contents

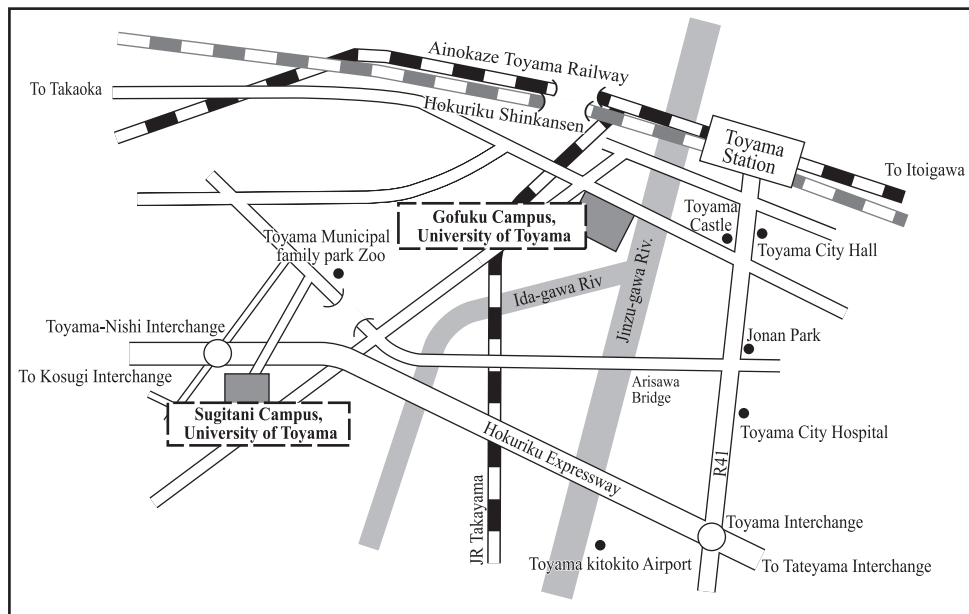
#### Major of Cognitive and Emotional Neuroscience

Educational area	Responsible teacher	Research contents
System Emotional Science	Professor Hisao Nishijo	<ul style="list-style-type: none"> <li>· Neural mechanisms of emotion, learning/memory, and behavioral expression in the limbic system</li> <li>· Neural mechanisms of social cognition and non-verbal communication</li> <li>· Non-invasive functional brain mapping of human higher brain functions</li> </ul>
	Associate Professor Hiroshi Nishimaru	<ul style="list-style-type: none"> <li>· Neural mechanisms of stress and brain development</li> <li>· Central control of autonomic nervous functions</li> <li>· Neural mechanisms of chemical senses (taste and olfactory sensation)</li> <li>· Neuronal mechanism of Sensorimotor integration underlying emotional behavior</li> </ul>
Molecular Brain Science	Professor Kaoru Inokuchi	<p>We aim to resolve the mechanisms underlying memory formation in mammals by making full use of molecular biology, biochemistry, cell biology, histochemistry, electrophysiology, behavioral pharmacology, optogenetics, and live-imaging.</p> <ul style="list-style-type: none"> <li>· Research on the physical substance of engram</li> <li>· Research on the dynamics of engram</li> <li>· Research on memory association and cell assembly</li> </ul>
Molecular Neuroscience	Professor Hisashi Mori	<ul style="list-style-type: none"> <li>· Analysis of molecular basis of higher brain functions such as cognition, emotion, and sociality with generation of novel genetically modified mouse models.</li> <li>· Development of novel molecular imaging methods in the brain.</li> </ul>
	Associate Professor Tomoyuki Yoshida	<ul style="list-style-type: none"> <li>· Analysis of molecular basis of neuro-immune interactions.</li> <li>· Research on molecular mechanisms of central synapse formation</li> <li>· Research on pathogenic mechanisms of neurodevelopmental disorders</li> </ul>
Integrative Neuroscience	Professor Ryoji Tamura	<ul style="list-style-type: none"> <li>· Neural mechanisms of learning and memory in the hippocampus</li> <li>· Temporal coding in the hippocampus</li> <li>· Cortico-hippocampal interplay</li> <li>· Mechanism for memory consolidation in sleep</li> <li>· Functional analyses of eye movements</li> <li>· Mechanisms of gustatory information processing in the central nervous system</li> </ul>
Molecular Neuropathology	Professor Masakiyo Sasahara	<ul style="list-style-type: none"> <li>· We aim to resolve the functional role of platelet-derived growth factor (PDGF) in various biological phenomena. We establish conditional knockout mouse models of PDGF receptors, and analyze these models and the cultured cells isolated from them. Cell biology and morphology are the major tools of our analyses.</li> <li>· Our studies are focusing on the coordination of higher brain function, and on the protection, repair and regenerative mechanism of nervous system. Fibroproliferative diseases and regenerative tissue responses are focused as well.</li> </ul>
Neuropsychiatry	Professor Michio Suzuki	<ul style="list-style-type: none"> <li>· Brain imaging studies on pathophysiology of schizophrenia and their application to objective diagnosis of psychotic disorders</li> <li>· Neurophysiological studies in schizophrenia and related disorders</li> <li>· Pharmacotherapy to improve cognitive dysfunction in schizophrenia</li> </ul>
	Associate Professor Tsutomu Takahashi	<ul style="list-style-type: none"> <li>· Mechanisms of symptom development and preventive strategies for schizophrenia</li> <li>· Mechanisms of brain maturation, personality development, and sociality in adolescence</li> <li>· Early diagnosis and intervention for dementia</li> </ul>



Educational area	Responsible teacher	Research contents
Neurosurgery	Professor Satoshi Kuroda	<ul style="list-style-type: none"> <li>· Basic and clinical research on pathophysiology and treatment in cerebral ischemia</li> <li>· Clinical research on surgical technique and perioperative management in surgical revascularization</li> <li>· Basic and clinical research on neuroendovascular surgery</li> <li>· Basic and translational research on regenerative medicine in central nervous system</li> <li>· Basic and clinical research on pathophysiology and surgical therapy of moyamoya disease</li> <li>· Basic and clinical research on pathophysiology and surgical therapy in pediatric neurosurgery</li> <li>· Clinical research on multidisciplinary treatment for brain tumor</li> <li>· Basic and translational research on cancer stem cell in central nervous system</li> <li>· Clinical research on less invasive surgery by neuroendoscopy</li> <li>· Translational research on development of the devices for surgical procedure and functional recovery</li> </ul>
Anatomy and Neuroscience	Professor Hiroyuki Ichijo	<ul style="list-style-type: none"> <li>· Animals move toward favorable environments: feeding and mating, and escape from unfavorable stressful environments. These behaviors governed by specific neural circuits are selected through natural selection in evolution. Our purpose is to understand structure and function of neural circuits for the behaviors in evolutionary aspects.</li> <li>· Research on neural mechanisms of antero-posterior topography, left-right lateralization, and maturation of habenular nuclei under stress or aversive environments in mice.</li> <li>· Research on neural mechanisms of asymmetric behaviors in scale-eating cichlids.</li> <li>· Research on neural mechanisms of differential behaviors between courtship and refusal in goby fishes, <i>Rhinogobius flumineus</i>.</li> <li>· Research on evolutionary mechanisms of animal innate behaviors in individual-based model simulation.</li> </ul>
Behavioral Physiology	Professor Keizo Takao	<ul style="list-style-type: none"> <li>· Investigation of the physiological basis of learning, memory, emotion, and cognition</li> <li>· Exploration and evaluation of mouse models of neuropsychiatric disorders using behavioral analyses</li> <li>· Elucidation of the pathophysiology and development of therapies for neuropsychiatric disorders using mouse models</li> <li>· Development of new genetically engineered mice</li> <li>· Development of new reproductive technologies</li> </ul>

# University of Toyama Campus Locations



## **The site of examination Faculty of Medicine and Pharmaceutical Sciences, Sugitani Campus, University of Toyama**

### **Transportation to the Faculty of Medicine and Pharmaceutical Sciences, Sugitani Campus, University of Toyama**

#### ◎By Bus

- About 30 -minute ride on Toyama Local Loop Bus “University Hospital of Toyama University” (bus stop No.3 departing in front of Toyama Station). Take off at “University Hospital of Toyama University”.

#### ◎Others

- About 20 minutes by car from “Toyama kitokito Airport”
- About 5 minutes by car from “Toyama Nishi IC” on Hokuriku Expressway



Access to the Faculty of Medicine  
and Pharmaceutical Science,  
Sugitani Campus. University of Toyama

Inquiries about the Guidelines for Recruitment of Students, admission exam,  
and preliminary consultation for applicants with physical disabilities

\* The applicant should make inquiries on his or her own unless absolutely necessary.

The Examination Section of the Admissions Office for Educational Affairs Division(Sugitani Campus),  
University of Toyama

Address: 2630 Sugitani, Toyama City, Japan 930-0194  
TEL: 076-434-7658