

**Master's Courses**  
**2017 October (Fall) Admission**  
**2018 April (Spring) Admission**  
**Affiliated School Recommendation**

# **Application Guidelines**

Application Period:

**2017 October (Fall) Admission**  
June 15, 2017 — June 21, 2017

**2018 April (Spring) Admission**  
October 19, 2017 — October 27, 2017

**Akita University**  
**Graduate School of Engineering Science**

<http://www.riko.akita-u.ac.jp/>

## Overseas Affiliated Universities

Akita University is actively working with international exchange activities.

Inter-University Agreements 58 Universities (30 Countries and Regions) As of Mar.23, 2017

Countries, Regions	Universities	Date of Conclusion
India	Indian Institute of Technology Madras	Mar 21, 2014
	VIT University	Jun 12, 2015
Indonesia	Institut Teknologi Bandung	Jul 12, 2012
	Trisakti University	Jun 10, 2014
	Universitas Gadjah Mada	Jun 8, 2015
Korea	Hanbat National University	Jun 8, 2001
	Wonkwang University	Oct 12, 2007
	Kangwon National University	Mar 24, 2008
Thailand	Faculty of Science, Chulalongkorn University	Nov 28, 2012
	Suranaree University of Technology	Aug 17, 2015
	Chiang Mai University	Dec 10, 2015
Taiwan	Lunghwa University of Science and Technology	Jul 15, 2005
China	Heilongjiang University	Oct 19, 1988
	China Medical University	Oct 6, 1989
	Central South University	Aug 24, 2004
	Liaoning Technical University	Apr 20, 2005
	Dalian Nationalities University	Jun 27, 2005
	Lanzhou University	Aug 1, 2005
	Jilin University	Feb 6, 2007
	Northeastern University	Aug 9, 2007
	Donghua University	Dec 3, 2009
	Tongji Medical College Huazhong University of Science and Technology	Mar 24, 2010
	Chang'an University	Nov 18, 2010
	Beihua University	Nov 20, 2012
	Jiaxing University	Nov 12, 2014
Philippines	University of the Philippines Diliman	Sep 24, 2012
	University of the Philippines Manila	Feb 4, 2013
Bhutan	Royal University of Bhutan	Jun 14, 2012
Vietnam	Hanoi University of Science and Technology	Dec 2, 2008
	University of Transport and Communications	Dec 3, 2008
Malaysia	University of Malaya	Nov 20, 2013
Myanmar	University of Yangon	Sep 19, 2014
Mongolia	Mongolian University of Science and Technology	Oct 22, 2009
	Mongolian State University of Education	Jul 23, 2010
	Mongolian National University	Jun 19, 2013
	New Mongol Academy	Jan 25, 2016
Israel	University of Haifa	Sep 24, 2010
Kenya	Kenyatta University	Mar 2, 2010
Botswana	Botswana International University of Science and Technology	Oct 23, 2009
	University of Botswana	Mar 31, 2011
Mozambique	Eduardo Mondlane University	Jan 12, 2014
	Instituto Superior Politécnico de Tete	Mar 23, 2017
Republic of South Africa	The University of The Witwatersrand	Sep 1, 2014
Australia	Griffith University	Jun 29, 1996
	Curtin University	Aug 1, 2013
Papua New Guinea	Papua New Guinea University of Technology	Aug 1, 2013
USA	St. Cloud State University	Jul 24, 1996
Canada	Memorial University of Newfoundland	Jun 17, 2013
Chile	Universidad de Santiago de Chile	Nov 21, 2013
Italy	University of Cagliari	Dec 9, 2009
	University of Ferrara	Jun 30, 2014
Netherlands	University of Twente	Oct 23, 2007
Kazakhstan	East Kazakhstan State Technical University	Jun 8, 2011
Sweden	Lulea University of Technology	May 9, 2013
Germany	Technische Universität Bergakademie Freiberg	Jul 4, 2012
Finland	Lapland University of Applied Sciences	Oct 23, 2009
Belarus	Belarussian State Medical University	Jul 26, 2004
Romania	University of Bucharest	Sep 28, 2010

## Inter-Faculty Agreements 16 Faculties ( 9 Counties and Regions) As of Aug.4, 2016

Faculties	Countries, Reijons	Faculties, Universities	Date of Conclusion
Faculty of International Resource Sciences	Indonesia	Faculty of Engineering, Hasanuddin University	Apr 23, 2014
Graduate School of Medicine	China	Beijing Hospital, Ministry of Health	Nov 14, 1995
	Singapore	Alice Lee Center for Nursing Studies, Yong Loo Lin School of Medicine, National University of Singapore	Mar 7, 2016
	USA	John A. Burns School of Medicine, University of Hawaii	Aug 4, 2016
	France	The Faculty of Medicine of Lille 2 University	Apr 13, 2011
Akita University Hospital	China	The First Hospital of Lanzhou University	Jun 12, 2014
Graduate School of Engineering & Resource Science • Faculty of Engineering science	Taiwan	College of Engineering, Minghsin University of Science and Technology	Apr 12, 2010
	China	Department of Precision Instruments and Mechanology, Tsing Hua University	Mar 1, 2007
		Department of Chemistry, Tsing Hua University	Jan 17, 2008
		School of Materials Science and Engineering, Tongji University	May 24, 2010
	Zambia	Shanghai Key Lab of D&A for Metal Functional Materials, Tongji University	May 24, 2010
		School of Mines, University of Zambia	Jan 20, 2003
	Tunisia	School of Engineering, University of Zambia	Mar 12, 2003
	New Zealand	Faculty of Technology, University of Sfax	Dec 18, 2003
USA	Auckland University of Technology	Nov 27, 2012	
Venture Business Laboratory	USA	Montana College of Mineral Science and Technology	Jun 24, 1982
	China	Shanghai Key Lab of D&A for Metal Functional Materials, Tongji University	Sep 2, 2011

**Master's Courses**  
**2017 October (Fall) Admission**  
**Affiliated School Recommendation**  
**Graduate School of Engineering Science**  
**Akita University**

**Application Guidelines**

The Master's Courses are offered by Akita University Graduate School of Engineering Science to international students having a recommendation from one of Akita University's overseas affiliated schools. These courses provide the students with the opportunity to obtain a Master's Degree in either Science, Engineering Science or Engineering. **Japanese will be the main language used in the courses.**

**1. Number to be Admitted**

Department (Major)	Fall
Life Science	a few
Materials Science	a few
Mathematical Science and Electrical-Electronic-Computer Engineering	a few
Systems Design Engineering	a few
Cooperative Major in Life Cycle Design Engineering	a few

**2. Application Qualifications**

- The status of residence of a incoming student must be "College Student."
- All of the qualifications below must be satisfied, and the enrollement at Akita University must be promised once the candidate is accepted.
  - (1) Applicants must have received higher education in the field of related their desired major.
  - (2) Applicants must have achieved the excellent academic performance.
  - (3) Applicants need to be people of integrity.
  - (4) Applicants must be recommended by either the president of their school or the dean of the faculty attended.
  - (5) Applicants must be able to graduate or have graduated from one of Akita University's overseas affiliated universities between June 1, 2015 and September 30, 2017.

**Note :**

Applicants who are accepted based on the qualifications above, yet are later confirmed as not being able to complete the admission procedures by the deadline will not be admitted. Details on admission procedures will be sent to all accepted students along with a Letter of Acceptance.

### **3. Application Period and Mailing Address**

(1) Application Period:

From June 15, 2017 to no later than June 21, 2017.

- 1) If brought in person or by proxy, application documents will be accepted at the Admissions Office between 9:00 a.m. and 4:00 p.m.
- 2) If mailed, application documents must be sent by registered mail and “Application to Master’s Course, Admission by Recommendation, Graduate School of Engineering Science” must appear in red on the front side of the envelope. The documents must reach the Admissions Office no later than 4:00 p.m. on June 21, 2017. Special attention should be paid in estimating the days needed for overseas delivery.

(2) Mailing address:

Admissions Office  
Akita University  
1-1, Tegata Gakuen-machi  
Akita-shi 010-8502 Japan  
Tel: +81-18-889-2313  
E-mail: [nyushi@jimu.akita-u.ac.jp](mailto:nyushi@jimu.akita-u.ac.jp)

### **4. Application Procedures**

(1) Documents to be submitted

① Letter of Recommendation

Recommendations must be written by the applicant’s supervising instructor and be issued by the president of the school or the dean of the faculty of the affiliated university.

② Application for Admission

Requested information must be entered on the designated form (attached herein).

③ ID Photo Card

A frontal-view photograph of the applicant’s face, without a hat, 4.5 cm x 3.5 cm in size and taken within three months prior to this application must be pasted in the designated area of the ID photo Card (attached herein).

④ Certificate of Completion or Prospective Completion or Certificate of Graduation

Must be prepared by the president or the dean of the school attended.

⑤ Academic Record Transcripts

Must be prepared by the president or the dean of the school attended and sealed in an envelope.

⑥ Proof of Evaluation Fee Payment

Evaluation Fee is 30,000 yen.

When depositing from an overseas bank, please make sure that the fee is sent by Telegraphic Transfer to the (below) bank account in yen. Payment made by other currency will not be accepted. Any cost for the transfer is to be paid by the applicant. Please enclose a copy of "Application for Remittance" when mailing the admission application documents.

1. Amount: 30,000 yen (The fee must be received in yen)

2. Remittance Method: Telegraphic Transfer

3. Remittance Fee: to be paid by the payer

4. Remittance Period: June 1, 2017 - June 21, 2017

Japan time must be observed.

5. Remittance Information:

Bank Name: Akita Bank, Ltd.

Branch: Tegata Branch

Address: 160-1, Aza-Yamazaki, Tegata, Akita-shi, Akita, 010-0851 Japan

Account Number: 688502

Recipient: Akita University

Bank Identifier Code (SWIFT): AKITJPJT

**Note:**

- a) When filling out the "Application for Remittance," please enter "Evaluation fee" as "Purpose of Remittance," and enter "applicant's name" in the message box.
- b) After remitting the evaluation fee, Please send an e-mail to that effect to Admissions Office as soon as possible.
- c) In case of remitting the evaluation fee from the interior of Japan, Please send an e-mail to that effect to Admissions Office.  
Admissions Office will give instructions to you.  
Please don't make a remittance before receiving instructions.
- d) If the Evaluation Fee received does not meet the required amount of 30,000 yen, the application procedure will be considered incomplete, and the application will not be accepted. The Evaluation Fee will be returned to the applicant, but the remittance fee will be withheld.

⑦ Other

- Applicants who live in Japan and do not have Japanese citizenship must submit a certified copy of Alien Registration issued by the municipality where they reside.
- Applicants residing overseas must submit an authorized certificate of his/her family register or proof of citizenship in home country.

**Note:** Important notices for submitting documents

- a) No application will be accepted unless all documents mentioned above are fully and accurately completed.
- b) Once submitted, documents will not be returned to applicants for any reason.
- c) Applicants are not allowed to change departments, major and courses after submission of application.
- d) If Contact Address entered in the application form changes after submission, the Admissions Office must be promptly notified of such change.

E-mail: [nyushi@jimu.akita-u.ac.jp](mailto:nyushi@jimu.akita-u.ac.jp)

- e) Attached forms may be either hand-written or typed.

## 5. Evaluation of Applicants

Screening for admission will be conducted based on analysis of all documents submitted.

## 6. Pre-consultation for Disabled Applicants

As a preliminary step in the application process, disabled applicants (refer to the chart below) who need special consideration during either the application process or the course itself must submit a document detailing the items listed below (form not designated) together with a medical certificate prepared by a doctor no later than May 26, 2017. Early consultation is recommended since advance preparation may be needed in cases of severe disability.

- ① Name, age, contact address, telephone number, and desired department(major).
- ② Type and degree of disability.
- ③ Detailed explanation of care needed during application and course study.
- ④ Special preparation and care taken at the university last attended.
- ⑤ Description of everyday life.
- ⑥ Name, address, and telephone number of the university last attended.

If needs arise after the deadline of May 26, 2017 due to accident or other contingency, please contact the Admissions Office immediately.

Type of Disability	Extent of Disability
Visual	Those with eyesight of less than 0.3 with both eyes (Universal Eyesight Test Chart) or who have ophthalmologic functional disorders that do not allow easy recognition of normal size letters or diagrams, even with the use of a magnifying glass.
Hearing	Those with an auditory capacity of more than 60 decibels (Audiometer testing) who have difficulty listening to normal talking even with a hearing aid.
Physical	1. Those who are not capable of performing basic daily tasks such as walking or writing even with the use of orthopedic or prosthetic devices. 2. Those with physical disabilities not as severe as the above but who need constant medical assistance and/or observation.
Health	1. Those who are under constant medical restrictions due to prolonged chronic respiratory, kidney, nervous system illness, malignant growth, or other disorder. 2. Those placed under medical restrictions due to prolonged weak or feeble health.
Other	Those not specifically mentioned above, yet require special consideration when either applying for admission or attending classes during the course of study.

Translated from the original by the Graduate School of Akita University.

**Note:**

- a) The above are in conformity with Article 22-3 of the School Education Law Enforcement Regulations.
- b) Advance contact is also requested if the applicant uses a hearing aid, crutches, or a wheelchair on an everyday basis.

## 7. Acceptance Notification

Results are tentatively scheduled to be e-mailed to all applicants at 1:00 p.m on July 18, 2017.

Therefore telephone inquiries will not be honored. A letter of Acceptance will be sent to a successful applicant.

## 8. Promise of Enrollment

Accepted students must submit the Promise of Enrollment upon receipt of the Letter of Acceptance (a form enclosed with the Letter of Acceptance) to the Admissions Office no later than August 18, 2017. If this promise is not received by the deadline, it will be understood that enrollment will not take place.

## 9. Admission Procedures

- (1) Details for Admission Procedures will be sent to all who are accepted along with the Letter of Acceptance. Accepted students are strongly advised to come to Japan in time to complete the Admission Procedures in person.

(2) School Fees (must be paid in Japanese currency)

- ① Admission fee: 282,000 yen (subject to change)
- ② Tuition: 267,900 yen for the first semester (535,800 yen for the first academic year) (subject to change)

**Note :**

- a) Admission fee paid will be not refunded for any reason.
- b) The above school fees are projected amounts and are subject to change before or during the course. Revised admission fee will apply to all new students if the revision takes place before the end of the Admission Procedure Period. If the tuition is revised at the time of admission or during the course, the new tuition takes effect at the time of revision.
- c) If a candidate cancels his/her admission before September 29, 2017 after completion of the Admission Procedures due to unavoidable circumstances, the tuition paid may be refunded upon the payer's request only after designated procedures are completed.

(3) Other information

- 1) Those with an excellent academic standing yet who have difficulty paying the admission fee due to financial circumstances and those who demonstrate other financial needs may be eligible upon screening to apply for financial aid. Those accepted will be either exempt from paying all or half of the admission fee, or may be all owed to pay the fee at a later date.
- 2) Those with an excellent academic standing yet who have difficulty paying the tuition due to financial circumstances and those who demonstrate other financial needs may be eligible upon screening to apply for financial aid. Those accepted will be either exempt from paying all, half or a third of the tuition, or may be allowed to pay the fee at a later date.

Admissions Office  
Akita University  
1-1, Tegata Gakuen-machi  
Akita-shi 010-8502 Japan  
Tel: +81-18-889-2313  
E-mail: [nyushi@jimu.akita-u.ac.jp](mailto:nyushi@jimu.akita-u.ac.jp)

## 10. Obtaining a Visa

The first step in obtaining a visa is to apply for a Certificate of Eligibility at the Ministry of Justice, Immigration Bureau in Japan. On behalf of these students who reside overseas, who have been accepted after the evaluation, and who are confirmed to have completed all the admission procedure



requirements, Akita University will apply for the Certificate of Eligibility upon the request of the student. Upon receipt of the Certificate of Eligibility from the Immigration Bureau, Akita University will then mail it to the student's address. The student is to submit his/her passport and the certificate to a Japanese diplomatic office (Japanese Embassy or Japanese Consulate) in his/her home country. A visa will be issued approximately one week after submitting the above documents.

**Note :**

- a) Akita University International Exchange Center (hereafter referred to as International Exchange Center) will request the residential status of "College Student" when applying for the Certificate of Eligibility upon the request of the student.
- b) Admission may be turned down by the student under unavoidable circumstances, but the student will be required to send the Certificate of Eligibility immediately back to the International Exchange Center along with a letter stating the reason for the cancellation.
- c) To ensure a prompt application process, applicants who commission the International Exchange Center to apply for the Certificate of Eligibility must make sure that all documents (explained below) are completely filled out and are submitted at the time of applying for the course. However, the immigration office may find it necessary to request additional documents.

**Flow chart on how the college student visa is obtained:**

- ① Submission of documents necessary for Certificate of Eligibility at the time of application for the course  
(applicant → International Exchange Center)
- ② Completion of admission procedures after having been accepted  
(accepted student → Admissions Office)
- ③ Application for Certificate of Eligibility  
(International Exchange Center → Sendai Regional Immigration Bureau)
- ④ Issuance of Certificate of Eligibility  
(Sendai Regional Immigration Bureau → International Exchange Center)
- ⑤ Mailing of Certificate of Eligibility  
(International Exchange Center → accepted students)
- ⑥ Applying and obtaining of college student visa in the students' home country.  
(accepted student → Japanese Embassy or Japanese Consulate)
- ⑦ Entry into Japan under college student status

## Application Documents for Certificate of Eligibility

\* Designated forms are available.

		Documents	No.of copies	Notes
*	(1)	Application for Certificate of Eligibility	1	Application forms and instructions are found at the following URL site: <a href="http://www.immi-moj.go.jp/english/tetuduki/kanri/shyorui/01-format.html">http://www.immi-moj.go.jp/english/tetuduki/kanri/shyorui/01-format.html</a> or <a href="http://www.moj.go.jp/ONLINE/IMMIGRATION/16-1-1.html">http://www.moj.go.jp/ONLINE/IMMIGRATION/16-1-1.html</a>
*	(2)	Photo (40mm x 30mm)	1	The same photo used on the application form for the course must be pasted on the designated place of the Application for Certificate of Eligibility form.
	(3)	Copy of passport (if issued)	1	All the pages where the applicant's information is entered must be photocopied and submitted.

For any questions about a certificate of eligibility:

Akita University International Exchange Center

1-1, Tegata Gakuen-machi

Akita-shi 010-8502 Japan

Tel: +81-18-889-2258

E-mail: [ryugaku@jimu.akita-u.ac.jp](mailto:ryugaku@jimu.akita-u.ac.jp)

**Master's Courses**  
**2018 April (Spring) Admission**  
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**1. Number to be Admitted**

Department (Major)	Spring
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Systems Design Engineering	a few
Cooperative Major in Life Cycle Design Engineering	a few

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  - (4) Applicants must be recommended by either the president of their school or the dean of the faculty attended.
  - (5) Applicants must be able to graduate or have graduated from one of Akita University's overseas affiliated universities between April 1, 2016 and March 31, 2018.

**Note :**

Applicants who are accepted based on the qualifications above, yet are later confirmed as not being able to complete the admission procedures by the deadline will not be admitted. Details on admission procedures will be sent to all accepted students along with a Letter of Acceptance.

### **3. Application Period and Mailing Address**

(1) Application Period:

From October 19, 2017 to no later than October 27, 2017.

- 1) If brought in person or by proxy, application documents will be accepted at the Admissions Office between 9:00 a.m. and 4:00 p.m.
- 2) If mailed, application documents must be sent by registered mail and “Application to Master’s Course, Admission by Recommendation, Graduate School of Engineering Science” must appear in red on the front side of the envelope. The documents must reach the Admissions Office no later than 4:00 p.m. on October 27, 2017. Special attention should be paid in estimating the days needed for overseas delivery.

(2) Mailing address:

Admissions Office  
Akita University  
1-1, Tegata Gakuen-machi  
Akita-shi 010-8502 Japan  
Tel: +81-18-889-2313  
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A frontal-view photograph of the applicant’s face, without a hat, 4.5 cm x 3.5 cm in size and taken within three months prior to this application must be pasted in the designated area of the ID photo Card (attached herein).

④ Certificate of Completion or Prospective Completion or Certificate of Graduation

Must be prepared by the president or the dean of the school attended.

⑤ Academic Record Transcripts

Must be prepared by the president or the dean of the school attended and sealed in an envelope.

⑥ Proof of Evaluation Fee Payment

Evaluation Fee is 30,000 yen.

When depositing from an overseas bank, please make sure that the fee is sent by Telegraphic Transfer to the (below) bank account in yen. Payment made by other currency will not be accepted. Any cost for the transfer is to be paid by the applicant. Please enclose a copy of “Application for Remittance” when mailing the admission application documents.

1. Amount: 30,000 yen (The fee must be received in yen)
2. Remittance Method: Telegraphic Transfer
3. Remittance Fee: to be paid by the payer
4. Remittance Period: October 5, 2017 - October 27, 2017  
Japan time must be observed.
5. Remittance Information:

Bank Name: Akita Bank, Ltd.

Branch: Tegata Branch

Address: 160-1, Aza-Yamazaki, Tegata, Akita-shi, Akita, 010-0851 Japan

Account Number: 688502

Recipient: Akita University

Bank Identifier Code (SWIFT): AKITJPJT

**Note:**

- a) When filling out the “Application for Remittance,” please enter “Evaluation fee” as “Purpose of Remittance,” and enter “applicant’s name” in the message box.
- b) After remitting the evaluation fee, Please send an e-mail to that effect to Admissions Office as soon as possible.
- c) In case of remitting the evaluation fee from the interior of Japan, Please send an e-mail to that effect to Admissions Office.  
Admissions Office will give instructions to you.  
Please don’t make a remittance before receiving instructions.
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⑦ Other

- Applicants who live in Japan and do not have Japanese citizenship must submit a certified copy of Alien Registration issued by the municipality where they reside.
- Applicants residing overseas must submit an authorized certificate of his/her family register or proof of citizenship in home country.

**Note:** Important notices for submitting documents

- a) No application will be accepted unless all documents mentioned above are fully and accurately completed.
- b) Once submitted, documents will not be returned to applicants for any reason.
- c) Applicants are not allowed to change majors after submission of application.
- d) If Contact Address entered in the application form changes after submission, the Admissions Office must be promptly notified of such change.  
E-mail: [nyushi@jimu.akita-u.ac.jp](mailto:nyushi@jimu.akita-u.ac.jp)
- e) Attached forms may be either hand-written or typed.

## 5. Evaluation of Applicants

Screening for admission will be conducted based on analysis of all documents submitted.

## 6. Pre-consultation for Disabled Applicants

As a preliminary step in the application process, disabled applicants (refer to the chart below) who need special consideration during either the application process or the course itself must submit a document detailing the items listed below (form not designated) together with a medical certificate prepared by a doctor no later than September 29, 2017. Early consultation is recommended since advance preparation may be needed in cases of severe disability.

- ① Name, age, contact address, telephone number, and desired department(major).
- ② Type and degree of disability.
- ③ Detailed explanation of care needed during application and course study.
- ④ Special preparation and care taken at the university last attended.
- ⑤ Description of everyday life.
- ⑥ Name, address, and telephone number of the university last attended.

If needs arise after the deadline of September 29, 2017 due to accident or other contingency, please contact the Admissions Office immediately.

Type of Disability	Extent of Disability
Visual	Those with eyesight of less than 0.3 with both eyes (Universal Eyesight Test Chart) or who have ophthalmologic functional disorders that do not allow easy recognition of normal size letters or diagrams, even with the use of a magnifying glass.
Hearing	Those with an auditory capacity of more than 60 decibels (Audiometer testing) who have difficulty listening to normal talking even with a hearing aid.
Physical	1. Those who are not capable of performing basic daily tasks such as walking or writing even with the use of orthopedic or prosthetic devices. 2. Those with physical disabilities not as severe as the above but who need constant medical assistance and/or observation.
Health	1. Those who are under constant medical restrictions due to prolonged chronic respiratory, kidney, nervous system illness, malignant growth, or other disorder. 2. Those placed under medical restrictions due to prolonged weak or feeble health.
Other	Those not specifically mentioned above, yet require special consideration when either applying for admission or attending classes during the course of study.

Translated from the original by the Graduate School of Akita University.

**Note:**

- a) The above are in conformity with Article 22-3 of the School Education Law Enforcement Regulations.
- b) The above required information (items ①-⑥) are also requested if the applicant uses, on an everyday basis, such common tools as a hearing aid, crutches, or a wheelchair.

## 7. Acceptance Notification

Results are tentatively scheduled to be e-mailed to all applicants at 1:00 p.m on November 13, 2017.

Therefore telephone inquiries will not be honored. A letter of Acceptance will be sent to a successful applicant.

## 8. Promise of Enrollment

Accepted students must submit the Promise of Enrollment upon receipt of the Letter of Acceptance (a form enclosed with the Letter of Acceptance) to the Admissions Office no later than December 7, 2017. If this promise is not received by the deadline, it will be understood that enrollment will not take place.

## 9. Admission Procedures

- (1) Details for Admission Procedures will be sent to all who are accepted along with the Letter of Acceptance. Accepted students are strongly advised to come to Japan in time to complete the Admission Procedures in person.

(2) School Fees (must be paid in Japanese currency)

- ① Admission fee: 282,000 yen (subject to change)
- ② Tuition: 267,900 yen for the first semester (535,800 yen for the first academic year) (subject to change)

**Note :**

- a) Admission fee paid will be not refunded for any reason.
- b) The above school fees are projected amounts and are subject to change before or during the course. Revised admission fee will apply to all new students if the revision takes place before the end of the Admission Procedure Period. If the tuition is revised at the time of admission or during the course, the new tuition takes effect at the time of revision.
- c) If a candidate cancels his/her admission before March 30, 2018 after completion of the Admission Procedures due to unavoidable circumstances, the tuition paid may be refunded upon the payer's request only after designated procedures are completed.

(3) Other information

- 1) Those with an excellent academic standing yet who have difficulty paying the admission fee due to financial circumstances and those who demonstrate other financial needs may be eligible upon screening to apply for financial aid. Those accepted will be either exempt from paying all or half of the admission fee, or may be all owed to pay the fee at a later date.
- 2) Those with an excellent academic standing yet who have difficulty paying the tuition due to financial circumstances and those who demonstrate other financial needs may be eligible upon screening to apply for financial aid. Those accepted will be either exempt from paying all, half or a third of the tuition, or may be allowed to pay the fee at a later date.

Admissions Office  
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E-mail: [nyushi@jimu.akita-u.ac.jp](mailto:nyushi@jimu.akita-u.ac.jp)

## 10. Obtaining a Visa

The first step in obtaining a visa is to apply for a Certificate of Eligibility at the Ministry of Justice, Immigration Bureau in Japan. On behalf of these students who reside overseas, who have been accepted after the evaluation, and who are confirmed to have completed all the admission procedure



requirements, Akita University will apply for the Certificate of Eligibility. Upon receipt of the Certificate of Eligibility from the Immigration Bureau, Akita University will then mail it to the student's address. The student is to submit his/her passport and the certificate to a Japanese diplomatic office (Japanese Embassy or Japanese Consulate) in his/her home country. A visa will be issued approximately one week after submitting the above documents.

**Note :**

- a) Akita University International Exchange Center (hereafter referred to as International Exchange Center) will request the residential status of "College Student" when applying for the Certificate of Eligibility.
- b) Admission may be turned down by the student under unavoidable circumstances, but the student will be required to send the Certificate of Eligibility immediately back to the International Exchange Center along with a letter stating the reason for the cancellation.
- c) To ensure a prompt application process, applicants who commission the International Exchange Center to apply for the Certificate of Eligibility must make sure that all documents (explained below) are completely filled out and are submitted at the time of applying for the course. However, the immigration office may find it necessary to request additional documents.

**Flow chart on how the college student visa is obtained:**

- ① Submission of documents necessary for Certificate of Eligibility at the time of application for the course  
(applicant → International Exchange Center)
- ② Completion of admission procedures after having been accepted  
(accepted student → Admissions Office)
- ③ Application for Certificate of Eligibility  
(International Exchange Center → Sendai Regional Immigration Bureau)
- ④ Issuance of Certificate of Eligibility  
(Sendai Regional Immigration Bureau → International Exchange Center)
- ⑤ Mailing of Certificate of Eligibility  
(International Exchange Center → accepted students)
- ⑥ Applying and obtaining of college student visa in the students' home country.  
(accepted student → Japanese Embassy or Japanese Consulate)
- ⑦ Entry into Japan under college student status

## Application Documents for Certificate of Eligibility

\* Designated forms are available.

		Documents	No.of copies	Notes
*	(1)	Application for Certificate of Eligibility	1	Application forms and instructions are found at the following URL site:  <a href="http://www.moj.go.jp/ONLINE/IMMIGRATION/16-1-1.html">http://www.moj.go.jp/ONLINE/IMMIGRATION/16-1-1.html</a>
*	(2)	Photo (40mm x 30mm)	1	The same photo used on the application form for the course must be pasted on the designated place of the Application for Certificate of Eligibility form.
	(3)	Copy of passport (if issued)	1	All the pages where the applicant's information is entered must be photocopied and submitted.

For any questions about a certificate of eligibility:

Akita University International Exchange Center

1-1, Tegata Gakuen-machi

Akita-shi 010-8502 Japan

Tel: +81-18-889-2258

E-mail: [ryugaku@jimmu.akita-u.ac.jp](mailto:ryugaku@jimmu.akita-u.ac.jp)

# Graduate School Outline

## 1. Organization

The Graduate School of Engineering Science consists of a two-year Master's Degree Program and a three-year Doctor's Degree Program.

The Master's Degree Program consists of 5 departments (9 courses), the Doctor's Degree Program consists of 1 department (4 fields). The 5 departments in the Master's Degree Program are related to the 4 departments in the undergraduate program.

### [Master's Degree Program]

Department (Major)	Course
Life Science	Life Science
Materials Science	Applied Chemistry
	Materials Science and Engineering
Mathematical Science and Electrical-Electronic-Computer Engineering	Mathematical Science
	Electrical and Electronic Engineering
	Human-Centered Computing
Systems Design Engineering	Mechanical Engineering
	Creative Engineering
	Civil and Environmental Engineering
Cooperative Major in Life Cycle Design Engineering	

### [Doctor's Degree Program]

Department	Field
Integrated Engineering Science	Life Science
	Materials Science
	Mathematical Science and Electrical-Electronic-Computer Engineering
	Systems Design Engineering

## 2. Master's Degree Program Department Outline

### 《Department of Life Science》

The results of research in the life sciences have led to breakthroughs that brought about many new advances in science and technology, as these fields can be seen as carving out the future of human society. This department therefore seeks to develop scientists able to unravel the elaborate workings of life phenomena; human resources who will play core and leading roles in their future professions taking advantage of their high level of knowledge, insight, and research skills in life science; and human resources who, with their grounding in science, will lead research and development in cross-disciplinary and academic fields related to medicine, pharmacology, engineering, agriculture, and other areas, and be active in many different fields related to life science including medicine, pharmaceuticals, food production, and development of bioenergy resources.

#### 1) Life Science Course

This course consists of the Biomolecular Chemistry field, covering areas including structural biology, protein chemistry, analytical chemistry, supramolecular chemistry, organic chemistry, electrochemistry, and computational chemistry, and the Molecular Cell Biology field covering areas such as biochemistry, molecular biology, cell biology, and disease biology. In addition to helping students systematically acquire fundamental knowledge in both fields, the course fosters engineers and scientists capable of independently pursuing research and development based on a high level of specialized expertise.

Course	Life Science		
Field of Instruction and Research	Quality	Faculty Member	Instruction Subject
Chemistry and Chemical Biology	Structural and functional analyses of industrially and/or medically important proteins; Total synthesis of biologically active natural products; Development of nanotechnology oriented bioelectrochemical devices; Exploiting sensing techniques for biomolecules and biological calls.	Prof. Masafumi Odaka	Advanced Biological Inorganic Chemistry
		Associate Prof. Yoshiaki Amatatsu	Advanced Theoretical Life Science I, II
		Prof. Kenshu Fujiwara	Synthetic Medicinal Chemistry I, II
		Associate Prof. Uichi Akiba	Advanced Bio-Electronic Chemistry I, II
		Lecturer Hirotoshi Matsumura	Advanced Analytical Spectroscopy I, II
		Lecturer Yoshihiko Kondo	Advanced Structural Organic Chemistry I, II
Molecular Cell Biology	Characterization of Disease Oriented Genes and Proteins, and Study of Physiological Functions of Molecular Chaperones in Protein Folding; Studies on immune responses and molecular physiology in the immune cells.	Prof. Hideaki Itoh <sup>①⁹</sup>	Molecular Biology
		Prof. Hiroshi Kubota	Frontier in Cell Biology
		Prof. Masaki Hikida	Molecular Cell Physiology
		Prof. Hideki Wakui	Advanced Biology of Disease
		Associate Prof. Wataru Nunomura	Evolutionary biology I, II

<sup>①⁹</sup> This professor will retire by the mandatory retirement regulation in March 2019.

## 《Department of Materials Science》

Today, as energy problems, environmental degradation, resource depletion, and other global issues become increasingly severe, demands are heightening for technology development toward the promotion of green innovation and highly efficient infrastructure systems. The role to be played by materials science, based on applied chemistry and on materials science and engineering, is becoming more important than ever before. Responding to these needs of society, it is essential that we bring together scientific knowledge across the basic fields of physics, chemistry, and mathematics, pursuing the limits of the potential in materials while aiming to create new materials and functions. This department develops engineers, scientists, and educators equipped with a strong sense of ethics, who are able to deal with various issues relating to materials science facing modern society. The department consists of the Applied Chemistry Course and the Materials Science and Engineering Course, playing a closely interrelated role in the education and research of the Graduate School.

### 1) Applied Chemistry Course

With chemistry-related knowledge as a foundation, the necessary curriculum is provided for linking material design and synthesis from the atomic and molecular level to creation of original materials. Human resources are fostered who can exercise agility in creating environmentally harmonious materials, such as through the development of new functional materials, effective use of chemical energy in recycling and regeneration, and advanced use of biological functions, and in conducting research and development on leading-edge technologies.

### 2) Materials Science and Engineering Course

Based on materials science and materials engineering, the necessary curriculum is provided for gaining practical experience in creating new materials and new functions, with the main focus on metals, semiconductors, and ceramics. In this way, human resources are fostered who are able to clarify the expression mechanisms of material properties based on simulations and on organizational and structural analysis from the nanoscale to the macro scale, and to contribute to developing technologies for producing and manufacturing next-generation functional materials in harmony with human society.

Course	Applied Chemistry		
Field of Instruction and Research	Quality	Faculty Member	Instruction Subject
Chemistry of Organic Materials	Synthesis and Properties of Organic Functional Materials	Prof. Mitsutoshi Jikei	Advanced Molecular Science and Technology
		Lecturer Kazuya Matsumoto	Functional Polymer Chemistry I, II
Applied Physical Chemistry	Design and Application of Environmental Advanced Materials from the Viewpoint of Physical Chemistry	Prof. Kenji Murakami	Advanced Surface Chemistry I, II
		Associate Prof. Kiyoshi Fuda <sup>①⁹</sup>	Advanced Engineering Physical Chemistry
Inorganic Materials Chemistry	Synthesis and Characterization of Inorganic Advanced Materials such as Porous Material, Catalytic Materials and Ceramics	Associate Prof. Sumio Kato	Advanced Inorganic Materials Chemistry
		Lecturer Masataka Ogasawara	Advanced Characterization of Inorganic Materials
Functional Surface Chemistry	Surface Processes for Environments and for a Production of Value-added Materials with Specific Functions	Prof. Takayoshi Shindo	Advanced Organic Resources Chemistry I, II
		Lecturer Yukihiro Inoue	Chemistry of Polymer Functionalities
Applied Analytical Chemistry	Solution, Spectrum and Nuclear Chemistry for Analytical Chemistry and Its Application for Environmental Science	Prof. Yoshihiro Iwata (Faculty of Education and Human Studies)	Advanced Analytical Chemistry I, II
Organometallic Chemistry	Development of Transition Metal Complex Catalysts Utilized for Organic Syntheses and Bio-inspired Methods of Molecular Transformation	Associate Prof. Hidetake Seino (Faculty of Education and Human Studies)	Advanced Organometallic Chemistry
Chemical reaction Engineering	Design, Optimization, Prediction and Sophistication of Chemical Processes by Means of Advanced Numerical Analysis Based on a Methodology of Systematic Fusion of Chemical Reaction Engineering, Transport Phenomena and Chemical Thermodynamics		Advanced Transport Phenomena I, II
Chemical Engineering	Design and Development of Chemical Processes	Associate Prof. Hiroshi Takahashi	Process Design Engineering
Energy Chemical Engineering	Process Design of Heterogeneous Reaction for Efficient Utilization of Energy and Resources	Prof. Katsuyasu Sugawara	Advanced Energy Chemical Engineering I, II
		Associate Prof. Hirokazu Okawa	Advanced Electrochemistry
Bioprocess Engineering	Bioprocess design and development by integrating biological and biochemical technologies, and creation and application of new functional biomaterials	Prof. Takeshi Gotoh	Nanobiotechnology
High-temperature Physical Chemistry	Physical chemistry of inorganic materials at high temperature and applications to design and production process of environmentally friendly amorphous materials	Associate Prof. Toru Sugawara	High-temperature Physical Chemistry
Eco Materials Science	Development of the Environmentally Conscious Composite Material being Superior in a Physicochemical Characteristic using Low Environment Impact Raw Material, and Its Application	Lecturer Hideki Murakami	Advanced Industrial Raw Materials
Environmental Analytical Chemistry	Advanced Isotope Analytical Chemistry and Its Application for Environmental Science	Lecturer Mayuko Fukuyama	X-ray Applied Science

<sup>①⁹</sup> This associate professor will retire by the mandatory retirement regulation in March 2019.

Course	Materials Science and Engineering		
Field of Instruction and Research	Quality	Faculty Member	Instruction Subject
Physical Properties of Materials	Research and Education on the Structural Analysis of Materials and the Development of Structural and Functional Materials by Microstructure Control	Prof. Kaichi Saito	Diffraction Physics
Photoscience of Solids	Optical Spectroscopy of Condensed Matter and Molecules	Prof. Nobuhiro Kodama	Material Photoscience I, II
Computation of Materials	Research and Education of Materials Computation Based on Molecular Orbital Method and Molecular Dynamics Method	Associate Prof. Yoshiyuki Sato	Materials Computation for Molecules I, II
Advanced Electronic Materials	Physical Properties and Their Application of Advanced Electronic Materials	Prof. Hitoshi Saito	Physics of Electronic Materials I, II
Ceramic Materials	Physical, Mechanical and Electrical Properties of Ceramics and Their Application to Energy Generation and Use	Associate Prof. Akihiro Nino	Physical and Mechanical Properties of Ceramics Materials I, II
Energy Chemistry of Materials	Research and Education on the Development of Functional Chemical Materials for Energy Transformation/Storage and Industrial Electrolytic Processing	Prof. Masami Taguchi	Advanced Energy Chemistry of Materials I, II
Surface and Interface Engineering	Processing and Evaluation for Appearance of Chemical Function at Surface and Interface of Materials	Prof. Motoi Hara	Surface and Interface Engineering I, II
Solidification Processing	Education and Research on Solidification Processing and Application of Manufactured Composite Materials and Structural Controlled Multi-phase Alloys	Prof. Setsuo Aso <sup>①9</sup>	Fusion and Solidification Processing I, II
Mechanics of Materials	Evaluation of Structure and Mechanical Properties and Material Design for Plastic Base, Metal Base and Ceramic Base Composites	Prof. Ken-ichi Ohguchi	Mechanics of Composite Materials I, II
Fabrication Engineering of Inorganic Materials	Fabrication Processes, Microstructural Control and Evaluation of Inorganic Materials via Powder Processes	Prof. Shigeo Hayashi	Design of Inorganic Materials I, II
Physical Properties of Materials	Research and Education on the Structural Analysis of Materials and the Development of Structural and Functional Materials by Microstructure Control	Prof. Kaichi Saito	Physics of Strength for Structural Materials I
Mechanics of Materials	Research and Education on the Constitutive Model for Inelastic Deformations and Its Application to Numerical Simulations	Prof. Ken-ichi Ohguchi	Physics of Strength for Structural Materials I, II
Microstructure Design of Materials	Education and Research on Numerical Simulation for Structure Formation	Associate Prof. Yukinobu Natsume	Microstructure Design of Materials I, II
Surface Modification	Modifying Process for the Functional Surface of Materials	Associate Prof. Michihisa Fukumoto	Surface Modification
Thin Film Materials	Fabrication and Evaluation of Thin Film Materials for Electronic Device Application	Associate Prof. Satoru Yoshimura	Physical Properties of Thin Film Materials
Molecular Electronics	Education for Understanding into the Basic Concepts Involved in the Field of Molecular Electronics, and Research on Phenomenon Concerning about Electron and Photon in Molecular Structure and Their Assembly, by Understanding of the Electrical Conduction in Single-Molecule Circuits, and by Introducing to the Experimental Techniques and Theoretical Concepts.	Lecturer Yutaka Tsujiuchi	Molecular Electronics I, II

<sup>①9</sup> This professor will retire by the mandatory retirement regulation in March 2019.

## 《Department of Mathematical Science and Electrical-Electronic-Computer Engineering》

The human resources to be developed in this department include those who will contribute to the advance of basic industries, solutions to energy problems, and harmony between humans and computers, driving revolutions in technology development, as well as educators and others equipped with highly specialized knowledge, skills, and insight in mathematics, theoretical physics, and computer science, and with advanced knowledge in the field of mathematical science.

Also to be fostered are human resources able to develop technologies for solving regional issues faced by Akita Prefecture with its advanced state of aging, and to communicate these to the world. In addition, they will acquire the skills for exercising leadership based on recognition of the importance of teamwork, and for dealing with unanticipated problems. That is, human resources will be fostered who, with their overview of the enormous specialized knowledge in the fields of mathematical science, electrical and electronic engineering, and computer engineering, are able to create new technologies and value for a highly aging society.

### 1) Mathematical Science Course

Education and research are carried out concerning advanced mathematical concepts and structures, and for clarifying and investigating the mathematical structures of physical and other phenomena. In this course whose main features include a focus on a systematic curriculum and qualifying examinations, students study advanced mathematics and related areas in order to acquire the ability to solve problems by logical thinking and from a mathematical science perspective.

### 2) Electrical and Electronic Engineering Course

Along with studies for systematically understanding knowledge in a wide range of specialized fields including electrical energy and equipment, electronics, photonic and electronic devices, and information communications and systems control, students engage in research for creating new applications and technologies by focusing on a particular field or integrating these fields. Through this experience, human resources are developed with creative thinking and flexible application skills.

### 3) Human-Centered Computing Course

The Human-Centered Computing Course develops human resources who, majoring in computer engineering, are equipped with creative thinking and flexible application skills enabling (i) the use of information and communication technologies (ICT) for supporting healthy longevity and home healthcare of the elderly in regional society, (ii) advancement of technologies and development of application systems related to environmental monitoring, disaster prevention and mitigation, and human sensing, and (iii) use of information networks, ICT, and other tools for realizing a safe and secure society.



Course	Mathematical Science		
Field of Instruction and Research	Quality	Faculty Member	Instruction Subject
Discrete Mathematics	Algebra, Discrete Mathematics, Foundations of Computer Science and their Applications	Prof. Akihiro Yamamura	Advanced Algebra I, II, V, VI Advanced Information Science I, II
		Lecturer Szilard Fazekas	Advanced Discrete Mathematics I, II
Continuous Mathematics	Analysis, Geometry, Topology and their Applications	Prof. Hajime Kawakami	Advanced Analysis I, II, IV, VI Computational Mathematics II
		Associate Prof. Mahito Kobayashi	Advanced Geometry I, II Advanced Topology III, IV Computational Mathematics I
		Lecturer Yasuharu Nakae	Advanced Topology I, II
Theoretical Physics	Fundamental Theories for Phase Transition and Transport Phenomena in Quantum Many-Body Systems such as Electron Systems in Solids and Quark-Gluon Systems, and their Applications to Novel Phenomena.	Prof. Masaru Onoda	Quantum Many-Body Theory I, II
		Associate Prof. Kunihiko Yamaguchi <sup>⑲</sup>	Applied Solid State Physics
		Associate Prof. Yasunari Tanuma	Condensed Matter Physics III, IV
		Lecturer Tatsuhiko Misumi	Quantum Many-Body Theory III, IV

<sup>⑲</sup> This associate professor will retire by the mandatory retirement regulation in March 2019.

Course	Electrical and Electronic Engineering		
Field of Instruction and Research	Quality	Faculty Member	Instruction Subject
Electric Energy Engineering	Studies on analysis and design of generation, storage, transportation and usage of electrical energy, and materials relating to these.		Measurement and Instrumentation Engineering I, II
		Associate Prof. Seiji Kumagai	Advanced Materials for Electrical Engineering I, II
			Advanced Electric Power Engineering I, II
		Associate Prof. Mahmudul Kabir	Bio Electromagnetic Engineering I, II
Photonic and Electronic Device Engineering	Studies on physical properties of materials, relating to photonic and electronic devices, such as liquid crystals/semiconductors and design and development of the devices.	Prof. Seiji Horiguchi ⑱	Advanced Electron Device Engineering
		Prof. Toru Kurabayashi	Advanced Electromagnetic-Wave Engineering I, II
		Associate Prof. Yuichi Sato	Advanced Semiconductor Device I, II
		Associate Prof. Rumiko Yamaguchi	Electronic Display Engineering I, II
		Associate Prof. Marenori Kawamura	Optical Device Engineering I, II
Intelligent Information Communication Engineering	Studies on information communication system, signal processing and their application to medical care/welfare and measurement system.	Prof. Kazuhiko Imano	Advanced Electroacoustics I, II
		Prof. Hitoshi Obara	Digital Signal Processing Engineering I, II
		Associate Prof. Motoshi Tanaka	Advanced Communication Engineering I, II
		Lecturer Makoto Fukuda	Applied Piezoelectric Device Engineering I, II
			Signal Processing Engineering for Measurement I, II
Control System Engineering	Studies on electrical machines, power electronics, control and design of various systems.	Prof. Katsubumi Tajima	Electromagnetic Energy Conversion Engineering
		Associate Prof. Takeshi Miura	Advanced Control System Engineering I, II

⑱ This professor will retire by the mandatory retirement regulation in March 2018.

Course	<b>Human-Centered Computing</b>		
Field of Instruction and Research	Quality	Faculty Member	Instruction Subject
Biomedical and Welfare Engineering	Study on Applied Evaluation and Welfare Support Systems for Elder People, Disabilities by Virtual Reality Technology and Design of Computer and Software Systems.	Prof. Kazutaka Mitobe	Sensory Information Engineering I, II Virtual Reality I, II
		Lecturer Katsuya Fujiwara	Software System
Image Information System Engineering	Analysis and Algorithms of Remote Sensing Data, Image Information Applications and Security Systems	Prof. Yoichi Kageyama	Image Information I, II Remote Sensing Engineering I, II Security System I, II
		Lecturer Chikako Ishizawa	Advanced Electroacoustics I, II
Information Network Engineering	Technologies for Improving Performance, Functionalities and Resiliency for Internet and Broadband Communication Networks	Associate Prof. Masashi Hashimoto	Advanced Information Network Engineering I, II
Computer System Engineering	Study on Dependable Computer Systems and Design of Testable Logic Circuits	Associate Prof. Hiroshi Yokoyama (Center for Information Technology and Management)	Advanced Digital Logic Design I, II

## 《Department of Systems Design Engineering》

In parallel with rapid advances in science and technology, society is facing problems such as global warming from CO<sub>2</sub> emissions and the need to develop renewable energy sources. Here the role of mechanical engineering is of growing importance, in such areas as improving the technologies needed to enhance the functionality of equipment. Meanwhile, in Japan there have been major advances in the aerospace field of rockets and satellites, and in technologies for recycling of waste materials, while the need for creative engineering capable of creating and nurturing new industries has grown. The aging of society has also created an urgent need for technology advances, not only in the health and welfare area but in creating civil engineering technologies in harmony with the environment and improving the functions of urban and regional systems to build and maintain better communities.

The Department of Systems Design Engineering, through education and research on the design and development of these complex and large-scale systems, aims to nurture researchers, developers, and engineers equipped with fundamental knowledge in the specialized fields of mechanical engineering, creative engineering, and civil and environmental engineering, as well as having knowledge across the fields of system design, and who, with their accurate awareness of regional needs, are able to contribute to local society and to the world. To meet these aims, education and research are carried out in tandem in the following three areas.

### 1) Mechanical Engineering Course

Basic to mechanical engineering are four kinds of dynamics—material, thermal, fluid, and mechanical—plus control engineering. Education and research in the field of mechanical engineering is intended to deepen the specialized knowledge learned in undergraduate studies and enable it to be applied, as well as to build problem-finding and -solving capabilities and communication skills, so as to contribute from a global perspective to formation of a sustainable society where people, the environment, and machines are in harmony.

### 2) Creative Engineering Course

Education and research are carried out centering on mechanical engineering, for acquiring a high level of specialized knowledge in such areas as space engineering, control engineering, and thermofluid engineering, while also aimed at developing human resources with project execution skills (project management, problem discovery and solution, communication, and engineering design skills, etc.) and the ability to play a leading role in creative manufacturing and project implementation so as to contribute broadly to society.

### 3) Civil and Environmental Engineering Course

Research and education are aimed at acquiring advanced specialized knowledge in such areas as structural engineering, hydraulic engineering, geotechnics, urban and traffic engineering, and concrete engineering, and on this foundation to build up individual knowledge and skills for applying these to problem solving, while also fostering communication skills for cooperative problem solving, in order to contribute to formation of safe, reliable, and convenient infrastructure for society.

Course	<b>Mechanical Engineering</b>		
Field of Instruction and Research	Quality	Faculty Member	Instruction Subject
Nano Mechanics	Generation and Evaluation on the Micro/Nano Materials, Solid Mechanics and Measurements for the Mechanical Design, and Analysis on the Surface Structure and its Application	Prof. Yotsugi Shibuya	Advanced Solid Mechanics
		Prof. Mikio Muraoka	Micro/Nano Materials
		Prof. Eiki Okuyama	Advanced Sensors Engineering
		Associate Prof. Yoshiyuki Yamamoto	Advanced Applied Electromagnetism
		Associate Prof. Yasuyuki Miyano	Advanced Industrial Technology and Science for System Engineering Design
		Associate Prof. Makoto Yamaguchi	Characterization of Subsurface Structure
			Advanced Course on Functional Surface Engineering
Thermal and Fluid Science	Ice Melting and Water Freezing, Theory and Application for Renewable Energy Convergence, and Basic Study for Rarefied Gas Dynamics and its Application	Prof. Makoto Tago	Advanced Natural Convection Heat Transfer I, II
			Unsteady Fluid Dynamics and Flow Control
		Associate Prof. Yoshimi Komatsu	Computational Thermodynamics and Fluid Dynamics
		Lecturer Wataru Sugiyama	Kinetic Theory of Molecular Gas
Human Mechatronics	Controller Design for Mechatronics Devices, Analysis of a Physical Movement Mechanism, and its Application to Medical and Welfare Engineering	Prof. Akihiro Naganawa	Advanced Control Engineering
		Prof. Takehiro Iwami	Biomedical Engineering
		Associate Prof. Yoshihiro Sasaki	Actuator Engineering I, II
		Lecturer Takeshi Seki	Design of Digital Control System

Course	Creative Engineering		
Field of Instruction and Research	Quality	Faculty Member	Instruction Subject
Machine and Space Systems	Dynamic Analysis of Mechanical Systems and its Application to Mechanical Engineering and Sports		Advanced Vibration Engineering
	Theory and practical application of heat transfer and fluid flow, which is applicable to heat exchanger, energy conversion etc.	Prof. Takahiro Adachi	Heat Transfer Enhancement
	Methodology of mathematical formulation and controller design of multibody systems consisting of rigid and flexible bodies		Advanced course on vibration control
Creative Systems Design	Materials Science from Micro to Macro Aspects and Joining of Materials and Estimation of Strength and Fracture Toughness	Prof. Osamu Kamiya ⑱	Advanced Engineering Materials
		Associate Prof. Mamoru Takahashi	Micro Processing
	Education and study on development of measurement system theory		Advanced Engineering of Measurement System

⑱ This professor will retire by the mandatory retirement regulation in March 2019.

Course	Civil and Environmental Engineering		
Field of Instruction and Research	Quality	Faculty Member	Instruction Subject
Structural Mechanics	Linear and Nonlinear Mechanics and Theory of Structural Design of Steel and Timber Structures	Prof. Humihiko Gotou Lecturer Ryu Noda	Advanced Structural Mechanics Timber Structural Engineering
Hydraulics and Hydraulics Engineering	Theoretical and Applied Study by Hydraulics on Preservation of Water Environment and Prevention of Disaster in Rivers and Coasts	Prof. Hideo Matsutomi ⑱	Advanced Hydraulics
	Measurements and Numerical Modeling of Natural Disaster in rivers and coastal area	Lecturer Kazuya Watanabe	Coastal and river Engineering
Soil Mechanics and Geotechnical Engineering	Physicochemical and Mechanical Properties of Soft Soil	Associate Prof. Toshihiro Ogino	Advanced Soil Mechanics
Urban and Traffic Planning	Methods, and Analytical Techniques used in Traffic Engineering and Planning	Prof. Hidekatsu Hamaoka	Advanced Traffic Engineering
	Philosophy, Methods, and Analytical Techniques used in Urban and Traffic Planning with emphasis on the Logic and Assumption on which these are based	Associate Prof. Satoru Hino	Advanced Urban Planning
Concrete Engineering	Design of Construction Materials, Maintenance of Concrete Structures and Structural Analysis for Concrete Structures	Prof. Hidenobu Tokushige Associate Prof. Ryosuke Takahashi	Construction Material Design Advanced Structural Design

⑱ This professor will retire by the mandatory retirement regulation in March 2019.

## 《Cooperative Major in Life Cycle Design Engineering》

In today's industrial society with its ongoing advanced development, numerous issues have emerged that cannot be dealt with adequately in traditional frameworks. Recent years, in particular, have seen growing needs for tackling such issues as reducing environmental impact and forming a material-cycle society. In the light of such needs of society, this major was established as a joint course of the Akita University Graduate School of Engineering Science and the Akita Prefectural University Graduate School of Systems Science and Technology.

“Life cycle design engineering” in the course name is a branch of engineering that seeks to reduce environmental impact throughout the entire life cycle from resource mining and product planning, design, and manufacturing to disposal and recycling. It is therefore closely tied to many other fields of engineering including materials engineering, computer engineering, mechanical engineering, electrical and electronics engineering, civil and architectural engineering, and management engineering.

This major aims to develop human resources with a broad viewpoint and high sense of ethics, who can contribute from an international perspective to formation of a material-cycle society, and to revitalizing local communities in environmentally conscious ways. Toward these objectives, advanced education and research are carried out concerning life cycle design engineering through the close collaboration of the two schools offering this major.

### Main Features of the Cooperative Major in Life Cycle Design Engineering, and Matters to Note in Taking Entrance Exam

1. The degree granted carries the names of both Akita University and Akita Prefectural University.
2. Students are resident in both Akita University and Akita Prefectural University, but the official university of residence is that of the main supervisor providing primary research guidance.
3. Because students are enrolled in both Akita University and Akita Prefectural University, they can use the facilities and resources of both universities. (Some facilities and resources may not be available due to circumstances of each university.)
4. When the official university of residence is Akita University, research guidance may be received also from sub-supervisors of Akita Prefectural University.
5. Classes taken are those of the joint graduate school consisting of Akita University and Akita Prefectural University.
6. If the faculty member desired as the main supervisor belongs to Akita University, the student makes application to Akita University and takes the entrance examination given by Akita University. In this case, the official university of residence after admission to the major is Akita University, and payment of tuition and charges as well as application for scholarships, etc., is made as a student of Akita University.

Note that for this major it is not possible to apply to both Akita University and Akita Prefectural University.

Division	Life Cycle Design Strategies		
Field of Instruction and Research	Quality	Faculty Member	Instruction Subject
Life Cycle Design Engineering and Evaluation Studies	Educations and studies on designs and evaluations covering life cycles of products, businesses and social systems	Prof. Nozomu Mishima	Life cycle design engineering basics
Electrical Energy Engineering	Conversion, Storage and Delivery of Electrical Energy		Advanced Life Cycle Design Engineering
Computer and Software Systems	Education and Study on Design of Computer and Software Systems	Lecturer Katsuya Fujiwara	Software System
Environmental Engineering and Education on Risk	Education and research on cyclical use system of regional resources, learning system of the risk and improvement of water environment.	Akita Prefectural University, Associate Prof. Nobuhiro Kanazawa	Basics in Life Cycle Design
Resources Recycling Technology Life Cycle Assessment	Development of resources recycling technology Development of separation technology for recycling of powder waste Life Cycle Assessment (LCA) of products and services using Process Analysis and Input-Output Analysis	Akita Prefectural University Associate Prof. Ruili Liang	Life Cycle Assessment Basics in Life Cycle Design

Division	Systems Engineering for Environment		
Field of Instruction and Research	Quality	Faculty Member	Instruction Subject
Thermal and Fluid Dynamical Energy Engineering	Education and research on the transfer and conversion of the heat and fluid dynamical energy such as the renewable energy. Education and research on the evaluation of sensibility and its application to the industrial design	Prof. Masahide Nakamura	Transfer and Conversion of Heat and Fluid Dynamical Energy
Electromagnetic Energy Conversion Engineering	Development of new machines and improvement of conventional machines for electromagnetic energy conversion	Prof. Katsubumi Tajima	Electromagnetic energy conversion engineering
Engineering Materials and Manufacturing	Materials Science from Micro to Macro Aspects and Effect of Surface Conditions in Machinin	Associate Prof. Mamoru Takahashi	Micro Processing
Advanced Functional Materials	Research and education on materials design, functional properties and applications of shape memory alloys, damping alloys and superconducting materials	Associate Prof. Xiaoye Lu	Advanced Course of Functional Materials
Condensed Matter Physics	Electron tunneling phenomena in solids, physical properties of layered compounds	Associate Prof. Kunihiko Yamaguchi <sup>19</sup>	Fundamentals of Applied Condensed Matter Physics
Mechanical Engineering, Automotive Engineering	Technology development and evaluation of next generation vehicles and driver support systems with mechatronics and intelligence technology Effectiveness evaluation of active safety systems by accident analysis Development of the system aiming at quality improvement and labor saving of medical care, welfare and care	Akita Prefectural University Prof. Tetsushi Mimuro	Next-Generation Vehicle Engineering
Electromagnetic Compatibility, Communication Engineering	Estimation and suppression method of undesired electromagnetic radiation from printed circuit boards, Analysis of crosstalk between micro-strip lines on a printed circuit board, Estimation of equivalent radiation sources and measurement of near electromagnetic fields on a printed circuit board, Education and research of the electromagnetic compatibility of printed circuit boards in microwave frequency	Akita Prefectural University Associate Prof. Teruo Tobana	Electromagnetic Compatibility
Built Environment, Geographic Information Systems	Evaluation of thermal environment in external built space. Collaboration method of architect and building engineer. Installation, management and costbenefiteffectiveness of municipal geographic informationsystems in normal and disaster period. Development of building life-cycle assessment tool reflected family configuration change and repair work.	Akita Prefectural University Associate Prof. Koichi Asano	Advanced Course in Urban Environment

<sup>19</sup> This professor will retire by the mandatory retirement regulation in March 2019.



### 3. Requirements for Completion of the Master's Course

A Master's degree is awarded if the student has satisfied the following requirements: have at least two years' residence in the Master's program; acquire a minimum of 30 course credits shown in the chart below; have an acceptable Master's thesis; pass the final comprehensive examination.

Students who demonstrate exceptional achievement may receive the degree with a residence period of as short as 1 year.

#### Credits Needed for the Completion of the Master's Program (Except the Cooperative Major in Life Cycle Design Engineering)

Courses	Credits Required	Remarks
Common Subjects	2 credits (required)	
Specialized Subjects	13 credits (required)	
Common Subjects and Specialized Subjects	A minimum of 15 credits (elective)	A minimum of 10 credits in the major and a minimum of 2 credits from other majors.
Total	A minimum of 30 credits	

#### Credits Needed for the Completion of the Master's Program (For the Cooperative Major in Life Cycle Design Engineering)

Courses	Credits Required	Remarks
Specialized Subjects	14 credits (required)	
Common Basic and Ethical Subjects and Specialized Subjects	A minimum of 16 credits (elective)	(1) To earn a minimum of 4 credits in the major courses offered by the supervisor's university. (2) To earn a minimum of 8 credits* in the major / common courses offered by the vice-supervisor's university. * A minimum of 6 credits in the major courses are required. (3) A minimum of 4 credits offered by other departments of both graduate schools can be included in the "Credits Required" for the completion of the Master's Program.
Total	A minimum of 30 credits	

**Master's Course**  
**2017 October (Fall) Admission**  
**Affiliated School Recommendation**  
**Graduate School of Engineering Science, Akita University**  
**Application for Admission**

<b>Application No.</b>	※
<b>Name of Applicant</b>	
<b>Date of Birth</b>	_____ / _____ / _____ month                      day                      year
<b>Sex</b>	<b>Male</b> / <b>Female</b>
<b>Application Qualification</b>	
<b>Desired Department (Major)</b>	
<b>Desired Course</b>	
<b>Desired Supervisor</b>	Cooperative Major in Life Cycle Design Engineering only
<b>Contact Address</b>	Address: _____  Tel: _____                      postal code                      country Mail address: _____
<b>Educational and Employment History</b>	

**Note:**

1. ※ Official use only.
2. Please use BLOCK LETTERS and BLACK INK
3. Please read the Admission Guidelines carefully and enter all the information requested.
4. Contact Address is where applicant wishes to receive correspondence.  
 Any changes must be reported immediately.

**Master's Course**  
**2018 April (Spring) Admission**  
**Affiliated School Recommendation**  
**Graduate School of Engineering Science, Akita University**  
**Application for Admission**

<b>Application No.</b>	※
<b>Name of Applicant</b>	
<b>Date of Birth</b>	_____ / _____ / _____ month                      day                      year
<b>Sex</b>	<b>Male</b> / <b>Female</b>
<b>Application Qualification</b>	
<b>Desired Department (Major)</b>	
<b>Desired Course</b>	
<b>Desired Supervisor</b>	Cooperative Major in Life Cycle Design Engineering only
<b>Contact Address</b>	Address: _____  Tel: _____                      postal code                      country Mail address: _____
<b>Educational and Employment History</b>	

**Note:**

1. ※ Official use only.
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**Master's Course  
2017 October (Fall) Admission  
Affiliated School Recommendation  
Graduate School of Engineering Science  
Akita University**

## ID Photo Card

Classification	Recommendation by Affiliated School
Application No.	※
Name	
Desired Department (Major)	
<div style="border: 1px dashed black; padding: 10px; width: fit-content; margin: 0 auto;"> <p>Please paste ID photo. (4.5cm x 3.5cm) Upper frontal view of applicant without a hat.</p> </div>	

Note:

1. ※ Official Use Only
2. Photo must be taken within 3 months prior to application.

**Master's Course  
2018 April (Spring) Admission  
Affiliated School Recommendation  
Graduate School of Engineering Science  
Akita University**

## ID Photo Card

Classification	Recommendation by Affiliated School
Application No.	※
Name	
Desired Department (Major)	
<div style="border: 1px dashed black; padding: 10px; width: fit-content; margin: 0 auto;"> <p>Please paste ID photo. (4.5cm x 3.5cm) Upper frontal view of applicant without a hat.</p> </div>	

Note:

1. ※ Official Use Only
2. Photo must be taken within 3 months prior to application.

For 2017 October (Fall) Admission

For 2018 April (Spring) Admission

## Proof of Evaluation Fee Payment Form

Application Number: ※

Applicant's Name:

Desired Graduate School:

Desired Department (Major):

Please paste  
Proof of Payment for Evaluation Fee

Note: 1. ※Official Use Only  
2. Please make sure the Proof of Payment is securely pasted and the date of payment is visible.