The University of Electro-Communications

Cutting-Edge New Education

from April 2016

国立大学法人 電気通信大学

ⓒ 2016 UEC Tokyo.

＜*Cutting-Edge New Education*＞

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   - （3）Substantial Learning Environment
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Message from the President :
Moving with the times and towards a knowledge-based society

The University of Electro-Communications, which celebrates its centenary in 2018, recognizes that fostering and producing highly-skilled professionals who can lead the way in scientific and technological innovation in order to support a knowledge-based society is our primary mission. Therefore, we have decided to implement reform and reorganization to enhance and strengthen our institution. To this end, we have established an entirely new educational and research system since fiscal year 2016.

We have established a student-centered education system, in which the students can make phased and exploratory choices for their own research field in line with their progress. Also, we cultivate and produce talented human personnel who will obtain applied and practical abilities through our novel, unique HR education program.

UEC welcomes those people who wish to be internationally successful and contribute to the progress of society.

Takashi FUKUDA

President

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（1） Aims of Education and Research

Global Perspective

Leadership

Innovative Creativity

Professional Expertise

Aims of Education and Research

In order to support sustainable development of an affluent and safe society, we aim to contribute to the creation of new values in society, through study and research, in informatics and science & engineering, as well as in new innovative academic areas created through the integration of these two specialities.

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（2）Ideal Human Resources

Global Perspective

Leadership

Innovative Creativity

Professional Expertise

Ideal Human Resources

We aspire as a team to encourage our students to acquire practical, specialized knowledge in order to be innovative, creative members who will actively take the initiative as world-leading practitioners in their field.

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Enhancement of Educational and Research Abilities (Image)

UEC approaches priority issues with respect to interdisciplinary technology in the integrated fields for building next-generation infrastructure, such as

- **"ICT for information security, analysis of big data, robotics and control system technology."**
- **"Research and development for nano-technology and elemental technology to develop device sensor or advanced materials which have new functions."**

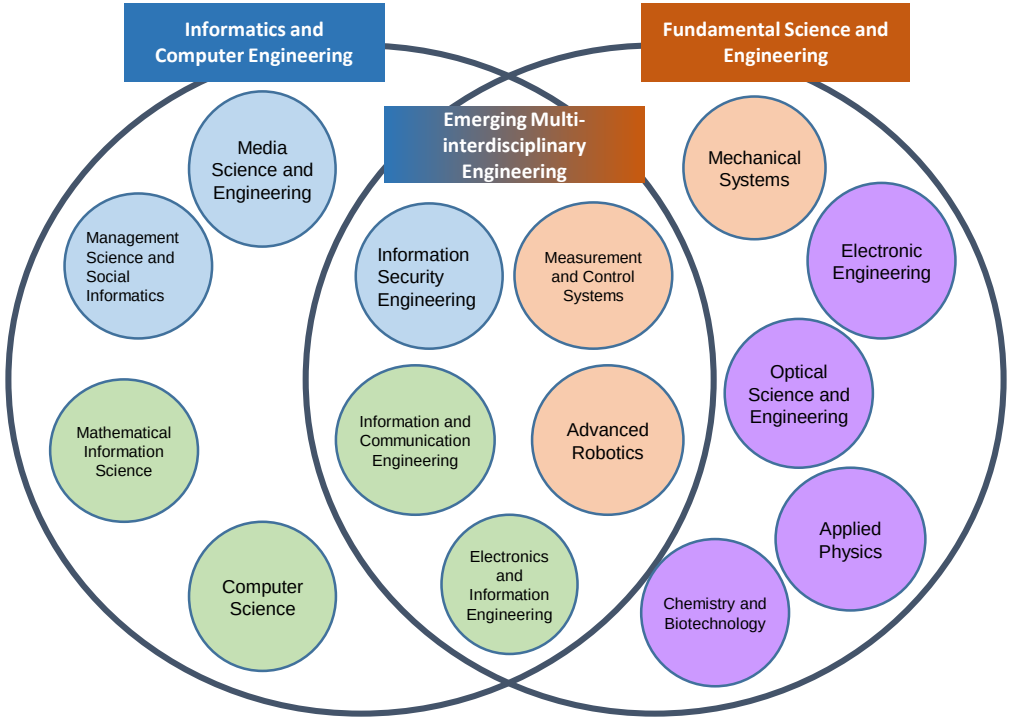
In addition, in order to support sustainable development of an affluent and safe society, we aim to contribute to the creation of new values in society, through study and research, in informatics and science & engineering, as well as in new innovative academic areas created through the integration of these two specialities.

Department of Informatics

Department of Computer and Network Engineering

Department of Mechanical and Intelligent Systems Engineering

Department of Engineering Science



Newly created integrated fields

■Medical-Engineering Collaboration (Robotics)

Robotics + Communication Control + Biogenic

■Electric Smart Grid

Renewable Energy + Network + Security

■Big Data Analysis

Social Information +Network + Analysis of Large Scale Data

The integrated fields will be revised and changed as necessitated with the passage of time.

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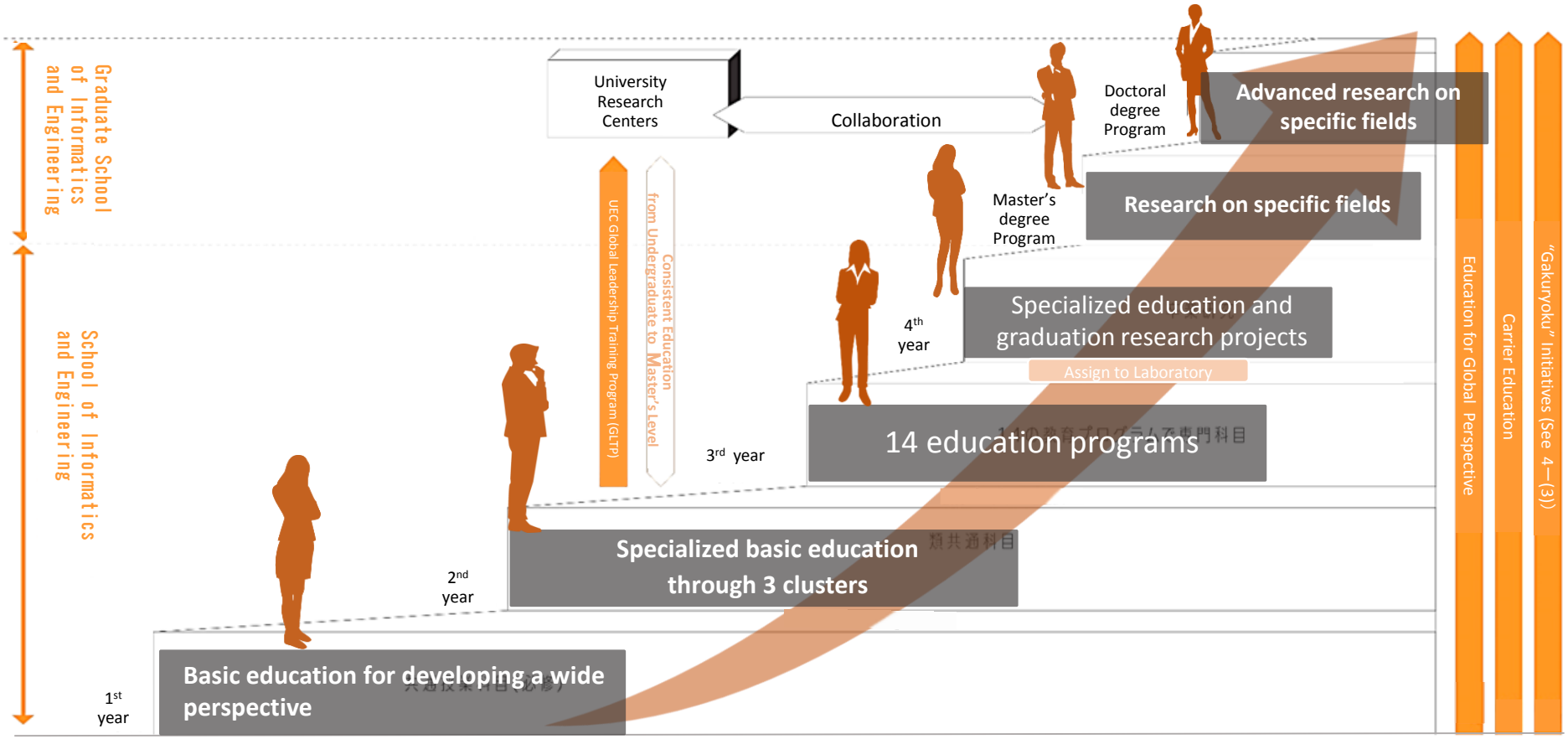
（1）Reform of Educational System （Features）

- In order to increase the flexibility in studies during the early stages, UEC adopts a new“cluster”based education system.
- By offering a wide range of fields of study and gradually selecting research fields, the new system enables students flexibility in choosing research specialties.
- UEC believes that it is important for faculty members, students and society to share and create of new value of integrated fields to contribute to society. Thus, our education curriculum has been reorganized into 3 clusters (Informatics and Computer Engineering, Emerging Multi-interdisciplinary Engineering, Fundamental Science and Engineering) and 14 education programs .



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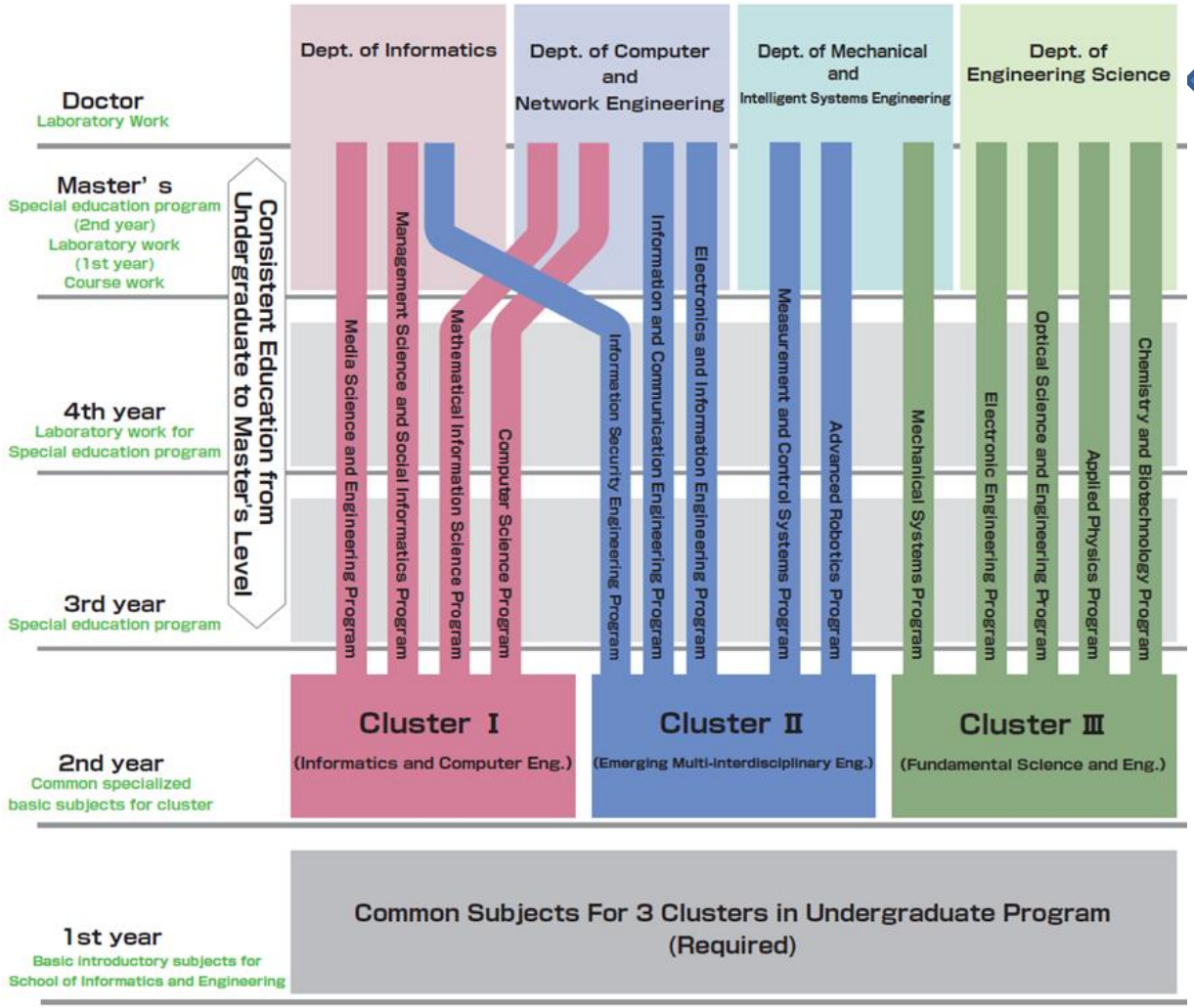
（1）Reform of Educational System (Overview for new education)

Establishment of a student-centered education system where students can make phased and exploratory choices for their own interests in research as they progress through the university



Collaboration with research centers

Information・Communication, Laser, Brain, Energy・・・・

Obtaining Advanced Special Education

Theme-setting research based on contemporary social needs

3rd Stage - Assign to Laboratory :
Student can choose a laboratory he/she wishes to join.

Student chooses own special field of study in stages

Obtaining Special Education

2nd Stage - Assign to Education Program

Choosing the subjects from common subjects related to each cluster

1st Stage - Assign to Cluster

Learning the common study fields to develop wide perspective

Exploratory learning, The ability of self-studying and taking action

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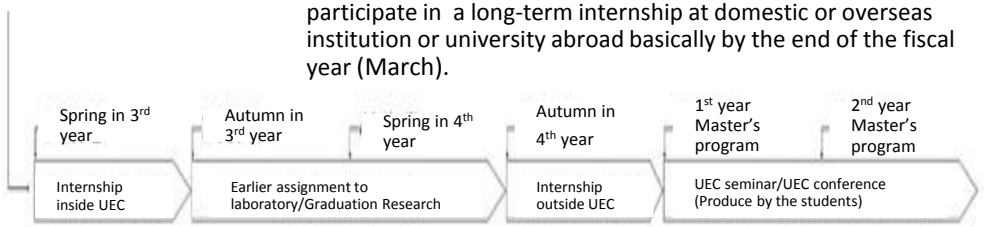
（2） Nurturing Global Human Resources

Global Leadership Training Program : GLTP

UEC Global Leadership Training Program

Development of overall capability in students who can lead Information science field in the world

"UEC Global Leadership Training Program" is a consistent education program from undergraduate to master's level. This program aims to foster students who can be the future leaders in the industrial world or international society. Therefore, the students who enroll this program will be selected on the basis of the academic records of 1st and 2nd years. The students of this program will be assigned to laboratories 6 months earlier than other students. Also, they will be required to complete their graduation research by Autumn in 4th year. In addition, after completing the graduation research, they need to participate in a long-term internship at domestic or overseas institution or university abroad basically by the end of the fiscal year (March).



Enhancement of the partnerships with Overseas Partners (Universities) and Global Alliance

Overseas Partner Universities

(Only a part of our overseas partner universities stated below)

(Asia)		
	Korea	Hanbat National University
	Taiwan	National Chiao Tung University/Tamkang University
	Thailand	King Mongkut's Institute of Technology, Ladkrabang
	Indonesia	Institut Teknologi Bandung
	China	University of Science and Technology of China
		Shanghai Jiao Tong University/Harbin Engineering University
		University of Electronic Science and Technology
		Beijing University of Posts and Telecommunications
(North and Central America)		
	USA	University of Oklahoma, The State University of NY at Binghamton
		University of California,Berkeley
	Mexico	Instituto Politecnico Nacional
(Europe)		
	France	Ecole Nationale Superieure des Telecommunications
		University of Aix-Marseille
		L'Ecole Nationale Superieure de Mecanique et des Microtechniques
		Institut Superieur de Mecanique de Paris
	Estonia	Tallinn University of Technology
	Bulgaria	Bulgarian Academy of Science
	Germany	University of Bremen, University of Stuttgart
	Sweden	Blekinge Institute of Technology
(Oceania)		
	Australia	University of Wollongong/University of Queensland
		Griffith University/University of Newcastle
		University of Technology, Sydney

Promotion of Overseas Internship

Expansion of Overseas Office
Promotion of Research Collaboration and Joint Activities

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（3）Substantial Learning Environment

“Gakuryoku”Initiatives

Student-centered “Gakuryoku” education to enjoy creation and encourage motivation

—Electronics Factory （sponsor an electronics contest etc.）

—Robomech Factory （student activities）
＜See picture below＞

100th Anniversary Campus

Toward 100th anniversary of UEC's foundation in 2018, we will establish the “UEC Port” as a part of UEC 100th anniversary campus improvement project. The new building and adjacent facilities will provide a valuable place for our development as well as cooperation and association with the local community and society.

Enhancement of Project Based Learning (PBL)

Education for Working Members of Society

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（4）Support System for Education and Research

For Students

Providing learning advisory service to students

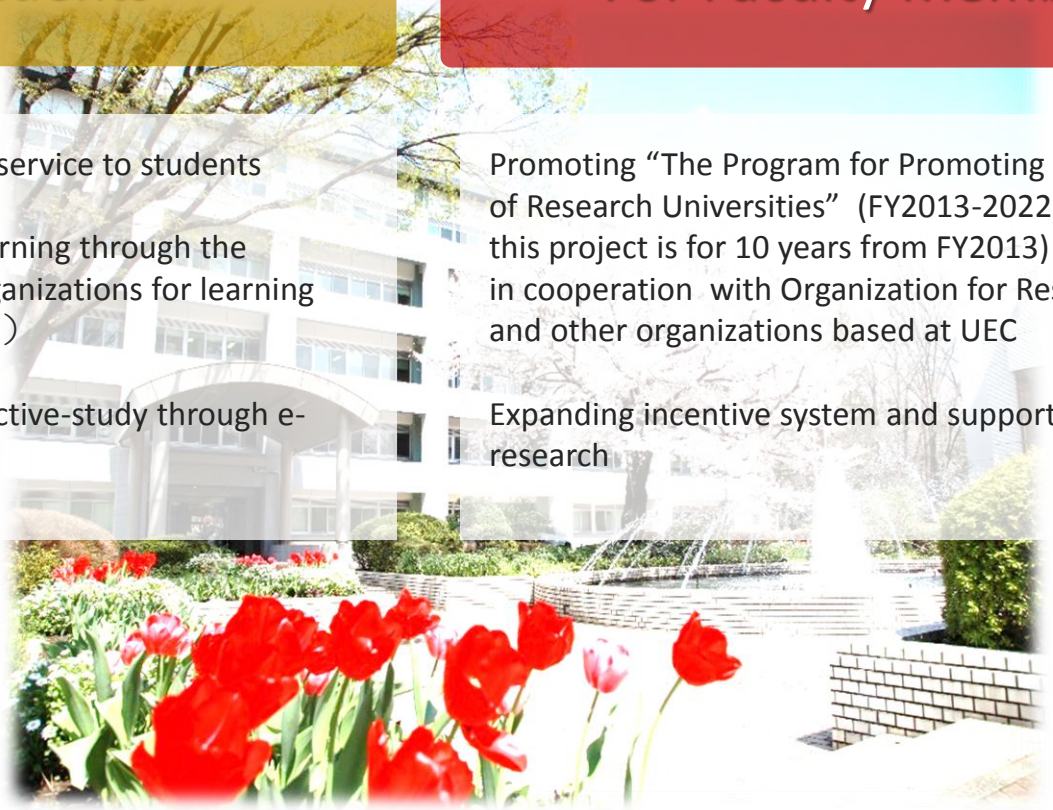
Supporting students for learning through the establishment of special organizations for learning and re-education(scheduled）

Supporting self-study and active-study through e-learning and active-learning

For Faculty Members

Promoting “The Program for Promoting the Enhancement of Research Universities” (FY2013-2022: In principal, this project is for 10 years from FY2013) in cooperation with Organization for Research Promotion and other organizations based at UEC

Expanding incentive system and support for education and research



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Academic Reorganization (Undergraduate and Graduate Programs)

(Current System)

Undergraduate

Numbers in ( ) show "Number of Place Available" of the programs/departments/clusters.

Faculty of Informatics and Engineering (790)

- Department of Informatics (150)
- Department of Communication Engineering and Informatics (210)
- Department of Mechanical Engineering and Intelligent System (140)
- Department of Engineering Science (190)
- Fundamental Programs for Advanced Engineering (100)
  - Mature Student Course (50)
  - Internship Course (50)

Graduate

Graduate School of Informatics and Engineering (Master's 340) (Doctor 29)

- Department of Informatics (Master's 74) (Doctor 6)
- Department of Communication Engineering and Informatics (Master's 103) (Doctor 9)
- Department of Mechanical Engineering and Intelligent Systems (Master's 69) (Doctor 5)
- Department of Engineering Science (Master's 94)) (Doctor 9)

Graduate School of Information Systems (Master's 118) (Doctor 30)

- Department of Human Media Systems (Master's 32) (Doctor 8)
- Department of Social Intelligence and Informatics (Master's 30) (Doctor 8)
- Department of Information Network Systems (Master's 28) (Doctor 7)
- Department of Information on System Fundamentals (Master's 28) (Doctor 7)

(New System)

School of Informatics and Engineering (720)

- Cluster I (Informatics and Computer Engineering) (210)
  - Media Science and Engineering Program
  - Management Science and Social Informatics Program
  - Mathematical Information Science Program
  - Computer Science Program
- Cluster II (Emerging Multi-interdisciplinary Engineering) (245)
  - Information Security Engineering Program
  - Information and Communication Engineering Program
  - Electronics and Information Engineering Program
  - Measurement and Control Systems Program
  - Advanced Robotics Program
- Cluster III(Fundamental Science and Engineering) (235)
  - Mechanical Systems Program
  - Electronic Engineering Program
  - Optical Science and Engineering Program
  - Applied Physics Program
  - Chemistry and Biotechnology Program
- Fundamental Programs for Advanced Engineering (30) ※
  - Mature Student Course (30)

※ Evening Course

Participating in Undergraduate Programs (Cluster I〜III)

Graduate School of Information Systems

- Department of Human Media Systems
- Department of Social Intelligence and Informatics
- Department of Information Network Systems
- Department of Information on System Fundamentals

Graduate School of Informatics and Engineering (Master's 500) (Doctor 59)

For mature students, some classes are taken place in the evening and on Saturday and it may be possible to complete graduate programs by taking those classes.

- Department of Informatics (Master's 110) (Doctor 13)
  - Media Science and Engineering Program
  - Management Science and Social Informatics Program
  - Information Security Engineering Program
- Department of Computer and Network Engineering (Master's 150) (Doctor 18)
  - Mathematical Information Science Program
  - Computer Science Program
  - Information and Communication Engineering Program
  - Electronics and Information Engineering Program
- Department of Mechanical and Intelligent Systems Engineering (Master's 105) (Doctor 12)
  - Measurement and Control Systems Program
  - Advanced Robotics Program
  - Mechanical Systems Program
- Department of Engineering Science (Master's 135) (Doctor 16)
  - Electronic Engineering Program
  - Optical Science and Engineering Program
  - Applied Physics Program
  - Chemistry and Biotechnology Program

Number of Places Available for School of Informatics and Engineering

Informatics and Engineering (day-time)	690 (±0)
Fundamental Programs for Advanced Engineering (Evening)	30 (△70)
Total	720 (△70)

Number of Places Available for Master's Program of Graduate School of Informatics and Engineering

Informatics and Engineering	500 (＋42)

＊including few mature students

Number of Places Available for Doctoral Program of Graduate School of Informatics and Engineering

Informatics and Engineering	59 (±0)

＊including few mature students

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