Fall 2024 Student Enrollment

Double-Degree Program Between

Graduate School of Information Science and Electrical Engineering, Kyushu

University, Japan

AND

Department of Electronics and Communications Engineering, School of Electronics,

Communications and Computer Engineering, Egypt-Japan University of Science and

Technology, Egypt

Degrees to be granted:

The degrees expected to be granted under this Double-Degree Program by KYUSHU University will be Doctor of Information Science, Doctor of Engineering, or Doctor of Philosophy (Ph.D.) and by E-JUST, Doctor of Philosophy (Ph.D.)

Selection Process:

The student shall be selected initially (first qualification check) by the E-JUST, then Kyushu university makes the final admission decision regarding the student.

Admission Procedures:

Required documentation including Curriculum Vitae (C.V), a transcript of the student, a letter of nomination are submitted through the home university (E-JUST) to the host university by the deadline which E-JUST designates.

Admission and Registration Department | Student Affairs Directory
IEgypt-Japan University of Science and Technology (E-JUST) – P.O.Box 197, New Borg ElArab City, Posta Code 21934, Alexandria, Egypt
Tel: 002-03-4599802   Fax: 002-03-4599805   Email: students@ejust.edu.eg   Website: www.ejust.edu.eg

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Course and research students:

- The study plan for the duration of the double-degree program shall be established and approved by the academic representative of each party before the students commence coursework.
- The study plan may be revised in collaboration and in written form with the approval of both parties.
- Two years students shall be required by the host university (Kyushu) to confer its degree on the student.

General pattern for the double degree program:

- The E-JUST student in the PhD program of the ECE may apply for the double-degree program.
- Before enrolling in the double-degree program, each E-JUST student will study for three semesters at E-JUST, complete the preliminary thesis by the end of the third semester, and earn at least eighteen (18) credits for course work individually.
- The E-JUST student will study for four (4) semesters [two (2) years as a rule] at KU. The semester of KU will start from April 1 for the student who enrolls at E-JUST in February or from October 1 for the student who enrolls at E_JUST in September.
- Each E-JUST student must earn at least sixteen (16) credits during their studies at KU university.

Research study to complete a thesis for Double Degree:

- The student will conduct the research to complete the written PhD theses both at the E-JUST and KU university.
- Each student will complete the PhD thesis in two (2) years as a rule, while being supervised by professors at the host university (KU).
- Each student shall present a defense of the thesis at the host university (KU) before returning to the home university (E-JUST).

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- Each student also submits another PhD thesis to the home university (E-JUST). each thesis examination procedure is subject to the existing regulation of each party.
- Both theses will be examined by the "Joint Thesis Examination Committee" which consists of the representatives from the parties.
- If the committee concludes that each thesis meets the requirements of the respective university, the individual student will be able to proceed to the final examination held by the host university (KU).

<<**Important note>>** the student who is not accepted at the double-degree program can apply at the regular PhD program at E-JUST according to the admission regulations.

ACADEMIC BACKGROUND

Department	Academic Background
Electronics and Communications Engineering (ECE)	The students' academic background should be Electronics and Communications Engineering.

Entrance Examination Topics

1. Electronics and Communications Entrance Exam (Multiple-Choice Questions):

1. Analog and Digital Communications & Optics.
2. Digital Signal Processing.
3. Analog and Digital Electronics & Microwaves.
4. Biomedical and Bioinformatics Engineering.

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Radio Frequency Integrated Circuits and Systems

- Design of integrated circuits for wireless power transfer systems
- Design of low phase noise CMOS oscillators for millimeter wave applications
- Sensors electronics
- Radio frequency transceivers design
- RF-CMOS Front-end (LNA, PA, Mixer, VCO, VGA)
- RFID systems

Digital and Embedded Systems

- Embedded Systems
- Embedded Machine vision
- Embedded Artificial Intelligence (AI)
- Embedded Internet of Things (EIoT) in Industry 4.0
- Embedded Systems for Agriculture Applications
- Application Specific and Reconfigurable Architectures
- Field Programmable Gate Arrays (FPGAs)
- Artificial Intelligence and Deep Learning applications on FPGAs
- System-on-Chip (SoC)
- Hardware/Software co-design
- High Efficiency Video Coding (HEVC/H.265)
- Versatile Video Coding (VVC/H.266)
- VLSI Implementation of communication systems
- VLSI Implementation of Wireless Body Area Networks
- High Performance Computing/Processing Systems

Digital Signal Processing

- Image and Video Processing Using Machine Learning and Deep Learning
- Speech and Audio processing

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- Multi-dimension Signal Processing and Stochastic Processes
- Multimedia Systems
- Pattern Recognition
- Computer Vision and Image Analysis
- Adaptive Filtering Design
- Sparse Signal Processing and Applications
- Smart and precision agriculture.

Wireless Communication Systems

- 5G/6G and beyond Communication System.
- Machine learning and deep learning applications in communication systems
- Broadband Wireless Systems
- PHY layer Design
- Coding for communication Systems
- Quantum commination
- Cognitive and software – Defined Radio
- Ultra-low power wireless communication systems.
- Aerial and vertical wireless networks.
- PHY layer security
- Wireless-Optical Communication
- IoT communications and networks.
- Communication system testbeds, SDRs, etc.
- Communication system development and practical consideration

Photonics Communications Systems

- Silicon Photonics and Photonic Crystals
- Visible Light Communications (VLC)
- Free-Space Optics (FSO)
- Quantum Information Theory
- Digital Signal Processing for Optical Communications

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- Coherent Lightwave Systems

Microwave Engineering and Remote Sensing

- Wireless Power Transfer and Energy Harvesting
- Batteryless Internet of Things (IoT) Sensing Systems Using Green RF Energy.
- Artificial Intelligence (AI), Machine Learning (ML) for Wireless and Antennas Applications
- Applications of Artificial Intelligence (AI) to antenna design.
- Wireless Electric Vehicle (EV) Battery Chargers
- Antenna and Resonators for Imaging Technologies
- Microwave and 60GHz mm Wave Antennas and Circuits
- Antenna and Rectennas for IoT Applications
- Diagnostic and Therapeutic Electromagnetic Applications
- Medical Imaging Using Microwave
- Reconfigurable Antennas and Arrays
- Novel Electromagnetic Materials
- Remote Sensing and Satellite Observation
- Quantum Microwave Systems and Applications
- Antennas and Resonators on Glass
- MHz-to-THz Sensors for Healthcare Applications
- Mm- wave and THz Systems for Sensing and Communications
- Nano Electromagnetics
- Wearable Microwave Components, Antennas, and Systems
- Smart Antennas, Digital Beam Forming and MIMO Antennas and Future Networks
- Short Range Wireless Applications, RFID, NFC, IoT, WSN
- Frequency and Time Domain Techniques for Antennas and Microwave Devices

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Biomedical and Bioinformatics Engineering.

..Biomedical Engineering

- Biomedical Signal Processing and Analysis
- Biomedical Imaging, Image Processing, and Visualization
- Machine Learning and Deep Learning for Medical Imaging
- Nanotechnology in Biomedical Engineering
- Biomedical Devices, Sensors, and Artificial Organs
- Biometrics and Bio-Measurement Technologies
- Diagnostic and Therapeutic Services in Biomedicine
- Biomedical Applications of the Internet of Things (IoT)
- AI in Biomedical Engineering
- Medical Virtual Reality (VR) and Augmented Reality (AR) Systems
- Wearable and Implantable Medical Systems
- Lab-on-a-Chip (LOC) Technologies
- Electroporation and Electrofusion
- Biomaterials
- Biomechanics
- Rehabilitation Science
- Clinical Engineering
- Architecture and Design Principles for Modern Hospitals
- Therapeutic and Diagnostic Uses of Medical Lasers
- Medical Imaging Systems
- Biomedical Modeling and Computer Simulations

Bioinformatics and Computational Biology

- Health Care Systems.
- Machine learning in Bioinformatics.
- E-Health technology and devices.
- E-Health information processing.
- Health monitoring systems and wearable system
- Deep Learning for Telemedicine/E-Health applications and services.

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- Telemedicine/E-Health application and services.
- DNA and RNA structure, function and sequence analysis.
- Gene engineering and protein engineering.
- Computer aided diagnosis.
- Database in Health Care Delivery
- Medical Pattern Recognition
- Computational Biology
- Bioinformatics and data structures

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