Fall 2020 International Student Enrolment

Post Graduate Program

Egypt-Japan University of Science and Technology offers opportunities of advanced study and academic research to Graduate students. The programs involve Master's (two years + Preparatory Course if applicable) and Doctoral (three years + Preparatory Course if applicable) courses leading to the corresponding degrees (M.Sc. and Ph.D.). Accepted applicants to the program will be enrolled in the next Fall 2020 semester, which begins on September 27, 2020. Lectures and instructions for research are given generally in English.

1. General Admission Requirements

No.	Condition	Requirements
1	**Age**	▪ **M.Sc. applicants** should be under 30 years on September 1, 2020. ▪ **PhD applicants** should be under 35 years on September 1, 2020.
2	**Educational Background and Records**	**Faculty of Engineering** ▪ **M.Sc. applicants:** should hold a Bachelor degree in Engineering with CGPA ≥ 3 out of 4 / Description ≥ very good/ classification ≥ second class upper or equivalent to the mentioned before. ▪ **PhD applicants:** should have M.Sc. (thesis-based) degrees in engineering, related to his proposed research topic, with a distinguished academic record in the related undergraduate program's major. **Institute of Basic and Applied Sciences** ▪ **M.Sc. applicants:** should hold a Bachelor degree in Science in the field of specialization with a CGPA ≥ 3 out of 4 / Description ≥ very good/ classification ≥ second class upper or equivalent to the mentioned before. ▪ **PhD applicants:** should have M.Sc. (thesis-based) degrees in Science, related to his proposed research topic, with a distinguished academic record in the related undergraduate program's major. **Faculty of International Business and Humanities** ▪ **M.Sc. applicants:** should hold a bachelor degree or equivalent in accounting and/or information systems with a CGPA ≥ 3 out of 4 / Description ≥ very good/ classification ≥ second class upper or equivalent to the mentioned before. ▪ **PhD applicants:** should the student must have a bachelor degree in accounting and/or information systems and a M.Sc. degree in accounting and/or information systems from an Egyptian university or any other academic institution (in Egypt or abroad). **Liberal Arts and Culture Centre (Applicable for Heritage Science**

		Program) ▪ **Diploma applicants / M.Sc. applicants:** should hold a bachelor degree in heritage science with a CGPA ≥ 3 out of 4 / Description ≥ very good/ classification ≥ second class upper or equivalent to the mentioned before.
3	**Language (English) Proficiency**	Admission Requirement: TOEFL iBT 79 or Academic IELTS: 6.5. ▪ The Language certificate should be valid on the date of the application of the applicant. ▪ Applicants whose native language is English are not required to submit official evidence of English Language Proficiency.
4	**E-JUST Interview**	Applicants must pass successfully the interview ▪ Applicant minimum acceptance percentage of is 60% at the interview ▪ Interview (Personal and Academic) ▪ Oral Examination * Please refer to page 8 for more details

2. Academic Background for Faculty of Engineering

Program	**Academic Background**
Electronics and Communications Engineering (ECE)	The students' academic background should be: Electronics and Communications Engineering
Computer Science and Engineering (CSE)	The students' academic background should be: Engineering Degree in Computer Science and Engineering
Mechatronics and Robotics Engineering (MTR)	The students' academic background should be: Mechatronics and Robotics, Computers and Automatic control, Power Electronics, Mechanical Engineering, Production Engineering and Mechanical Design. Students are expected to have good knowledge of Control Engineering, Electronics and Programming
Industrial and Manufacturing Engineering (IME)	The students' academic background should be: Industrial Engineering, Production Engineering , Manufacturing Engineering, Mechanical Engineering, Mechanical Design Engineering
Materials Science and Engineering (MSE)	The students' academic background should be: Metallurgy, Materials Science and Engineering, Mechanical Engineering, Production Engineering, Chemical Engineering, Textile Engineering, Nuclear Engineering, Electrical Engineering, Civil

	Engineering, other related Engineering discipline
Energy Resources Engineering (ERE)	The students' academic background should be: Mechanical Power Engineering, Energy Engineering, and Chemical Engineering
Environmental Engineering (ENV)	The students' academic background should be: Chemical, Architecture, Electrical, Mechanical, Nuclear, Civil, Environmental Engineering
Chemicals and Petrochemicals Engineering (CPE)	The students' academic background should be: Chemical and Petrochemicals Engineering, Material Science and Engineering, Mechanical Engineering and Metallurgy, other related disciplines

3. Academic Background for Institute of Basic and Applied Sciences

Program	**Academic Background**
Nanoscience (NAN)	The students' academic background should be: Science background with specialization in Special Chemistry, Chemistry major with any other subject (minor), Materials Science, Biochemistry, Other related fields
Applied and Computational Mathematics (ACM)	The students' academic background should be: Science background with specialization in Mathematics, Engineering with Mathematics background, Computer Science, Other related fields
Energy Materials (EMA)	The students' academic background should be: Science background with specialization in: Special Physics, Physics-major and Chemistry-minor, Materials Science, Energy Materials for Space Applications, Other related fields
Biotechnology (BIO)	The students' academic background should be: Science/ Computer Science , Graduates holding BSc or MSc degree from any Faculty/ Institute in one of the following fields of specialization Biotechnology, Microbiology, Biochemistry, Bioinformatics (Science or Computer Science) , Biological Sciences including botany, Zoology, Entomology

4. Academic Background for Faculty of International Business and Humanities

Program	**Academic Background**

Accounting and Information System (AIS)	The students' academic background should be: Accounting, Information Systems

5. Academic Background for Liberal Arts and Culture Centre (Applicable for Heritage Science Program)

Program	Track	Academic Background
Heritage Science	Conservation Science	The students' academic background should be: Relevant Knowledge in Conservation, Engineering , Natural Sciences, Computer Science, Information and communication Technology, Environment, Geology , or any allied disciplines with a desire to improve their performance and acquire innovative knowledge and skills to become an expert in heritage preservation Those who do not have the educational background as required by each program may be required to take complementary courses prior to starting regular graduate courses, or in parallel, while a level of competence in chemistry is essential to enrolment in the Conservation Science area of specialization).
	Museum Management	The students' academic background should be: Archaeology; Conservation; Fine Arts; History; Finance; Accounting; Engineering, Management; Marketing; Education; Public Relation; Law; Architecture; Computer Science, and Information & Communication Technology. The program admits students who are motivated to work in multidisciplinary team with respect to ethics, cultural diversity and social responsibility with satisfactory communication and academic skills. Students should be willing to promote and add value to the community and learn independently and effectively to investigate problems, create solutions, generate ideas, innovate and improve current practices.

6. Tuition Fees

Faculty of Engineering / Institute of Basic and Applied Science: 13,000USD / Year

Faculty of International Business and Humanities: 4,500USD/Year (PhD and MSc.)

4,000USD/Year (MSc. only)
5,000USD/Year (PhD only)

Liberal Arts and Culture Centre (Heritage Science): 1,500USD/Year

7. Preparatory Course

To prepare academically and linguistically for students' studies and researches in E-JUST, E-JUST offers preparatory course for 6 months at the maximum (please refer to the attached course list for Faculty of Engineering, to be updated for other faculties). Applicants will be notified the subjects which he / she needs to take, and estimated duration of the preparatory course when the admission result is announced to each successful applicants.

8. Selection Procedures

1. Application Submission

- Online submission is opened through E-JUST website from January 16 till February 15, 2020. www.ejust.edu.eg

2. Primary Screening Announcement

- E-JUST will send the result to each applicant after documents classification and analysis, the accepted applicants will be invited to the interview.

3. Interview and Exams

- The exam and interview will be held by video conference via Skype (requires good internet connection) on April 6 - 13, 2020.

4. Result announcement

- E-JUST will announce the final decision to the applicants.

5. Deadline to receive all the original certificates certified by the Egyptian Embassy

- Accepted applicants have to submit their documents to E-JUST international office. All the certificates must be certified by the Egyptian embassy from applicants' home country.

6. Arrival in E-JUST

- Accepted applicants should arrive at E-JUST maximum by September 20, 2020.

7. Medical Check up

- Students have to be tested for HIV examination in governmental hospital in Egypt and in case of positivity of the result the applicant will be forced to leave Egypt according to the Egyptian law.

8. Orientation Week

- Introducing E-JUST research and campus life to the students.

	Process	Date
1	Application Submission	January 16 - February 15, 2020
2	Primary Screening Announcement	April 5, 2020
3	Interview and exams	April 6 - 13, 2020
4	Result announcement	May 3, 2020
5	Deadline to receive all the original certificates certified by	June 4, 2020

	the Egyptian Embassy	
6	Sending the Acceptance Letter to the accepted applicants	August 16, 2020
7	Arrival in E-JUST	September 20, 2020
8	Orientation week	September 21 - 24, 2020
9	Start of lectures Spring 2020 Semester	September 27, 2020

* **Note**: Reasons for disqualification in any stage of selection procedure will NOT be disclosed

Schedule subject to change

9. Admission Examination

For all candidates:

1. Oral Examination
   - Knowledge of basics principles in the field
2. Interview
   - Research ability and potential
     - Potential for conducting independent experiments/surveys
     - Research ability and potential
     - Potential for conducting independent experiments/surveys
   - Presentation skills
     - Originality of the presentation (Percentage taken from web sites, borrowed material)
     - Logic and clearness to expose ideas (looking to audience)
     - Answering questions logic, and consistently
     - Clear and concise spoken English
   - Personal Character
     - Motivation and neatness
   - Awards and publication, others

The candidate conducts a 15-minute presentation by PPT (Power Point Presentation) for his/her research proposal in front of an evaluation committee. The presentation is followed by 15-minute discussion with the candidate to evaluate the main points given in the research proposal and to evaluate the candidate's research potential. Applicants are required to provide a copy of the research proposal and the power-point presentation before their interview date.

10. E-JUST Research Areas and Topics

Faculty of Engineering

1) Electronics and Communications Engineering

Radio Frequency Integrated Circuits and Systems

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

Digital System Architecture and Design

- Application specific, reconfigurable, and embedded architectures
- Networks-on-Chip, Network processor and router architectures
- System-on-Chips
- Parallel and multi-core systems
- Ultra low power and energy efficient architecture design
- High Performance Computing/Processing Systems
- Security Architectures/Secure Design of Embedded Systems
- Neuromorphic computing
- High Efficiency Video Coding (HEVC/H.265)
- Embedded Machine Vision Systems
- Wireless Body Area Networks

Digital Signal Processing

- Image and Video Processing
- Speech and Audio processing
- Multi-dimension Signal Processing and Stochastic Processes
- Multimedia Systems
- Pattern Recognition
- Computer Vision and Image Analysis
- Adaptive Filtering Design
- Sparse Signal Processing and Applications
- Compressive sensing
- Bioinformatics
- Biomedical Signal Processing

Wireless Communication Systems

- 5G and B5G Communication System
- Broadband Wireless Systems
- PHY Layer Design
- Coding for Communication Systems
- Cognitive and Software-Defined Radio
- PHY Layer Security
- Wireless-Optical Communications
- Machine learning for wireless communications
- Quantum Communications

Photonics Communications Systems

- Silicon Photonics and Photonic Crystals
- Visible-Light Communications (VLC)
- Free-Space Optics (FSO)
- Digital Signal Processing for Optical Communications
- Optical Space-Division Multiplexing (SDM).
- Coherent Light wave Systems

- Quantum Information Theory

Microwave Engineering and Remote Sensing

- Wireless Power Transfer Systems
- Nano- Antennas and Passive Devices
- Antenna and Resonators for Imaging Technologies
- Microwave and 60GHz mm Wave Antennas and Circuits
- Antenna and Resonators for IOT Applications
- Energy harvesting for Implantable and wearable devices
- Diagnostic and therapeutic Electromagnetic Applications
- Smart Antennas and Adaptive Antenna Arrays
- Antennas Design for Medical Applications
- Antenna for Imaging Technologies
- Antenna System for 5G Communication
- Frequency and Time Domain Technologies for Antenna and Microwave Devices
- Reconfigurable Antennas and Arrays
- Novel Electromagnetic Materials
- Remote Sensing and Satellite Observation

2) Computer Science and Engineering

Computer Architecture

- High Performance Architectures
- Matrix/Vector Processing
- Processor Architecture
- Performance Evaluation of Parallel Architectures
- Multi-core/Many-core Processors
- Hardware Visualization
- FPGA/System C Implementation

Computer Networks

- Cloud Computing
- Wireless Networks
- Delay-tolerant Networks
- Internet of Things (IoT)
- Interconnected Vehicles
- Vehicular Ad-Hoc Networks
- Cellar Networks and 5G and Beyond
- Cloud/Centralized Radio Access Network (C-RAN)
- Fog/Edge Computing
- Indoor Localization
- Calibration-free localization
- GPS Replacement Technologies
- Device-free Localization
- Device-free Activity Recognition
- Automatic Construction of Indoor Floor Plans
- Cognitive Radio Networks
- Software-defined Networks

Computer Security and Cryptography

- Network Security
- Information Security and Cryptography

- Computer Security
- Wireless Network Security
- IoT Security
- Vehicular Network Security
- Smart City Security
- Cloud Security
- Cyber Security
- Homomorphic Encryption

Parallel Computing

- High Performance Computing
- Heterogeneous Systems/Accelerators
- HPC on the Cloud
- High Performance Embedded Systems
- Big Data Processing and Knowledge Discovery from Data
- Parallelizing Compilers
- Dynamic Binary Translation
- Analytical Performance Modelling
- Quantum Computing
- Neuro-Processing Acceleration

Cyber-Physical Systems

- Machine Learning
- Computer-Aided Drug Design
- Road Traffic Control, Modeling, and Simulation
- Computational Robotics
- Human Activity Recognition
- Rigorous Simulation of Dynamical Systems
- Computable Analysis

Intelligent Systems

- Knowledge Discovery and Data Mining
- AI and Multi-Agent Systems
- Natural Language Understanding
- Computational Intelligence
- Bioinformatics
- Deep Learning

Computer Vision and Pattern Recognition

- Object/Person/Face Detection
- Object/Face Recognition
- Object/People Tracking
- Human Activity Recognition
- Optical Character Recognition
- Image Segmentation
- 3D Computer Vision
- Feature Detection/Description/Matching
- Video Surveillance
- Large-Scale Visual Recognition
- Vision Computing on Modern Parallel Architectures

Theory and Analysis of Algorithms

- Analysis of Algorithms
- Data Structures
- Graph Algorithms
- Computational Geometry
- Amortized Complexity
- Algorithms for Computer Graphics and Visualization

Stochastic Modeling and Simulation

- Queuing Theory
- Stochastic Optimization
- Performance Evaluation
- Cognitive Radio Network
- Health Care Applications

3) Mechatronics and Robotics Engineering

Bio-Mechatronic Systems

- Surgical Robots
- Rehabilitation Robots and Assistive Devices
- Human-Robot Interaction
- Prosthetic Devices
- Smart Medical Devices
- Bio-Inspired Robots

Magnetic Suspension and Bearing Systems

- Control of Magnetic Bearing Systems
- Applications of Magnetic Bearing in Medical Field
- Magnetically Levitated Wind Turbine
- Robots with Magnetic Bearing Joints
- Vibration Isolation Systems Using Magnetic Suspension
- Self-Bearing (Bearingless) Motors.

Intelligent Mechatronics Systems

- Flying/Walking Robot.
- Tele-Operation Systems.
- Aerial Manipulation Systems
- Multi-Locomotion Robots
- Legged Robots
- Wearable Vehicle
- Brain-Based Devices
- Micro/Nano Manipulation
- Parallel Manipulators
- Swarm Robots
- Intelligent control of Smart Actuators
- Nonlinear Vibration Systems
- Smart Structures

Field and Service Robots

- Mobile Robot Exploration, Navigation and Control
- Rescue Robots

- Inspection Robot
- Climbing Robots
- Robot Motion Control in Unstructured Area
- Landmines Detection Robots
- Indoor Service Robot.
- Insect-Killing Robot
- Solar Powered Rover
- Autonomous Underwater Vehicles, AUV
- Agriculture Robots
- Mining Robots
- Forestry Robots
- Construction Robots

Micro/Nano Electro-Mechanical Systems

- Tactile Sensing Systems
- Smart Sensor/ Actuators
- Energy Harvesting Devices
- Micro Flying Robot
- Microfluidics Systems

4) Industrial and Manufacturing Engineering

Applied Operations Research Laboratory

Container Terminal Planning and Analysis Applications

- Integrated Berth Allocation and Quay Crane Assignment
- Discrete Event Simulation Applications
- Container Vessel Stowage Planning

Healthcare applications

- Operating Room Planning and Scheduling.
- Nurse Planning and Scheduling.
- Simulation optimization of healthcare operations.

Energy and sustainability Management Applications

- Smart Grid Management and Optimization Models
- Crop Planning and Irrigation Water Management and Optimization

Supply Chain Management and Applications

- Green Vehicle Routing Problem/Pollution Routing Problem
- Electric Vehicle Related Problems: Charging Stations Location Allocation Problem
- Autonomous Trucks Logistics Problems
- Ride Hailing/Sharing Models

Supply Chain Management and Applications

- Data Analytics Based Inventory and Production Planning and Management
- The Joint Replenishment Problem

Conventional Machining Laboratory

- Modelling and Simulation of Metal Cutting Processes
- Ultrasonic-Assisted Machining (Milling or Drilling)
- Machining of Hard-to-Cut Materials (Milling or Drilling)
- Chatter Occurrence and Prevention in Milling Processes
- Machine-Tool/ Milling Process Interaction
- Dynamic Interaction between Feed Drive Systems and Cutting Process in Milling Machines

5) Materials Science and Engineering

Nano-materials for energy, sensing, environmental and electronic applications

- Perovskite, CTS, Organic and Quantum Dot Photovoltaic Solar Cells: Fundamental Investigation & Device Engineering.
- Nanomaterials for Gas Sensing Applications; Fundamental Investigation& Device Engineering.
- Carbon Nanostructured Materials (Graphene, Carbon Nanofibers and CNTs): Synthesis, Charactrization and Device Engineering in Supercacitors/Batteries/Fuel Cells applications.
- Nano-Piezo Electronic Materials: Approaches to Energy Scavenging.
- Strain Gauge Sensors: Materials and Fabrications.
- Thin Film and Bulk Nanostructured Thermoelectric Materials.
- Plasmonic Nanostructuted Materials as Photo-thermal Membranes.
- CNTs and Graphene-Based Materials for printed and Flexible Electronic Application.
- Photo catalysis and Environmental Catalysis for Hydrogen Generation and Fisher Tropcsh Synthesis.
- Modeling and Simulation of Nanostructured Materials for Science and Energy Systems.
- Corrosion and Super-hydrophobic Coatings with Self-heating Properties.
- Chitosan, Chitosan-Nanoparticles and Nanofibers Preparation and Characterization For Tissue Engineering And Drug Systems
- Electro spun Nanofibers and Its Applications in Water Desalination and Energy
- Materials of Solar Water Desalination
- Materials of Solar Hydrogen Generation

Mechanics of materials: Modeling, Simulation and characterization (properties, stress, strain and displacement)

- Mechanics of Friction Stir Welding of Similar and Dissimilar Materials
- Mechanical Electrical Properties of Biological Materials and Heart Tissues
- Mechanics of Microforming and Micro-Laser Drilling
- Mechanical and Electrical Properties of Hydroxyapatite
- Modeling and Simulation of Nano-Pieso Electric Materials
- Multi-Physics and Multi-Scale Analysis Techniques.
- Evolution of Boundary Elements in Fracture Mechanics
- Material Models On Macro and Micro Levels for Metals, Polymer and Nanocomposites
- Dynamic Mechanical Properties of Composites and Nano-Composites
- Laser Processing of Steels
- Hot Deformation of Metal Matrix Composites
- Formability of Ultrafine-Grained Structures
- Mechanical Processing of New TWIP Stainless Steels
- Evaluation of The Fatigue Performance of New High Strength Materials For Structural Engineering Applications

- Superplastic Forming
- Stir Casting of Metal Matrix Composites
- Laser Welding Similar and Dissimilar Materials
- Crashworthiness of High Strength Steels, Modeling and Simulation, Experiments
- Properties of Advanced Materials for Thermal Memory
- Hydroxyapatite: Preparation, Properties and Its Applications

<AFMM>Advanced Functional Metallic Materials (Design, Processing and Characterization)

- Ultra-High Strength, Super-Alloys and High Entropy Alloys
- Dental, Bio-Implants, And Bio-Degradable Metallic Materials
- Bulk-Nanostructure Materials and Severe Plastic Deformation
- Improved Castability and Cold Workability of Metals and Alloys
- Shape Memory and Superelastic Alloys for Sensing, Biomedical, And Structural Application
- Metal and Metal-Oxides Nano-Tubes and Nano-Rods (Production, Characterization and Applications
- Structural High Temperature Alloys for Power Plants Applications (Design, Production and Characterization)
- Bulk-Nanostructured Thermo-Electric Alloys
- Metals and Alloys for Radiation Sensing And Shielding
- High Temperature Superconductors

6) Energy Resources Engineering

Renewable Energy Systems

- Design of Solar Energy Systems
- Thermal Regulation of concentrator PV Systems Using Nanotechnology
- Thermoelectric System
- Solar cooling systems
- Solar energy utilization in water harvesting from atmospheric air
- Renewable energy- driven seawater desalination
- Solar energy storage using adsorption technology
- Solar systems for energy-efficient housing
- Renewable energy-based hybrid adsorption-vapor compression refrigeration systems
- Energy applications in buildings

Thermo-fluids

- Refrigeration and air conditioning
- Multi-phase flows
- Flow in porous media
- Heat and mass transfer with applications to energy systems
- Computational fluid dynamics and heat transfer
- Heat pipe
- Desalination systems
- micro-and Nano scale flows
- Multiscale Computations (continuum-Meso), Molecular Dynamic Simulation
- Heat Transfer

Alternative Energy Systems

- Fuel cell technology
- Proton exchange membrane fuel cells
- Direct methanol fuel cells
- Solid Oxide fuel cells
- Solar Hydrogen production
- Photoelectrochemical cells
- Photovoltaic/photoelectrochemical cells

Fuel and Combustion Engines

- Spray and liquid Atomization
- Alternative and Low-Grade Fuels
- Internal combustion Engines
- Biomass Gasification and Carbonization
- Nanoparticles synthesis Using Flames
- Integrated Combustion-Renewable Energy Systems

Energy Storage Systems

- Thermal Energy Storage
- Mechanical Energy Storage
- Electrochemical Energy Storage
- Hydrogen Storage
- Energy Storage Systems for Grid Support
- Thermochemical Energy Storage

Energy Conservation and Management

- Electric Vehicle and Fuel Cell Vehicle Energy Management Systems
- Intelligent Energy Management Strategies for PV-Wind-Fuel Cell-Energy Storage Hybrid Systems
- Energy Audits, Energy Efficiency and Energy Managements

7) Environmental Engineering

Natural Resources Management

- Nonconventional Water Resources (Desalination, Water Reuse And Their Applications Including)

- Integrated Thermal And Membrane Desalination
- Renewable Energy Driven Desalination
- Nuclear Power Plants-Desalination
- Water-Energy-Food Nexus
- Agriculture Greenhouse-Desalination Systems
- Tri-Hybrid Generation Of Water Electricity And Cooling System
- Other Desalination Related R&D Applications
- Groundwater Modelling/ Management (Salt-Water Intrusion)
- Applications Of Remote Sensing And Modelling Of Evapotranspiration
- Energy Conservation And Efficiency Improvements In Different Sectors

Environmental Assessment and Management

- Sustainability and sustainable development
- Environmental impact assessment
- Environmental management for sustaining a green environment
- Cleaner production for green industry
- Green healthcare units
- Climate change
- Water and waste water management
- Air quality assessment and monitoring
- Sustainable cities
- Waste assessment and management
- Sustainable development goals

Waste Management

- Wastewater Treatment Technologies
- Industrial Waste Treatment and Management
- Biofuels, chemicals and bio-fertilizers production from solid wastes
- Hydrogen and Methane Generation from Waste Materials
- Waste Recycling and Management
- Applications of Nanotechnologies for Water and Wastewater Treatment
- Sludge Treatment
- Advanced Oxidation Processes
- Application of water chemistry and microbiology for treatment of organic and inorganic pollutant

Air Quality

- Air Pollution Assessment and Control
- Implementation of Nanotechnology for Pollution Control and Detection
- Sensors and Detectors Technology
- Assessment of Industrial Emissions

8) Chemicals and Petrochemicals Engineering

Desalination using solar Energy

- Design of new solar collectors using nanofluids and its applications in water desalination
- Desalination Using Capacitive Deionization Techniques.

Design of wastewater treatment units and its applications

- Advanced Oxidation Techniques such as Plasma for Water Purification.
- Photocatalysis and its applications in water treatment
- Using New materials as ion exchange for water treatment
- Preparation of New electrodes and it applications for wastewater treatment by electrooxidation techniques.

Preparation of Nano-materials and its applications

- Ion exchange
- Electrocatalysis
- Fuel cells

Corrosion Protection

- Preparation of New Smart Materials and its applications for corrosion control

Catalysis and its applications

- Photocataysis and its applications in wastewater treatment, Production of new chemical and petrochemical materials.
- Electrocatalysis and its Applications in Supercapacitors, Batteries, Sensors and Biosensors.
- Enzyme-catalysis and its applications in wastewater treatment, production of foodstuffs and pharmaceutical materials.

Membrane fabrication and modifications and its applications in

- Desalination and Ultrafiltration processes.
- Fuel cells and Hydrogen production
- Separation processes.

Design of Micro-reactor and its applications such as:

- Preparation of fine chemicals, food stuffs and pharmaceutical drugs, etc.

Development of new polymeric materials:

- Composites, insulators, fibrous materials and conducting polymers, etc.

Biodiesel production from agricultural and oil wastes.

Chemical and Petrochemicals operations development and performance improvement

- Distillation, liquid extraction, gas absorption, crystallisation, adsorption, and many other separation techniques performance and productivity improvement.

Institute of Basic and Applied Sciences

1) Nanoscience Program

- Carbon-Based Nanostructures (Carbon Nanofibers, CNTs, Graphene, etc.) Materials for Energy Generation, Conversion and Storage (Photo-Hydrogen Generation, Supercapacitors, Batteries, Fuel Cells, QDDSCs.)
- Inorganic and Organic Thermoelectric Materials
- Sensing and Remediation of Water for the Toxic and Radioactive Elements
- Conducting Polymer Nanofilms and Their Application in Sensors and Catalysis
- Nanocatalyts for Micro-Reaction Systems and High and Low Temperature Synthesis Applications (Pharmaceutical and Petrochemical)
- Electro-Optical Characterization of Carbon Nanostructures by Using Advanced Laser Photolysis Techniques
- Inorganic Material/ Organic Polymer Nanocomposites and Their Application In Sensors, Catalysis, Photocatalysis, Drug Delivery and Super Adsorbents
- Electrical Conductive Carbon Nanofibers, Graphene, Carbon Nanotubes for Flexible Printed Electronics, Mechanical and Gas Sensing Applications.
- Mesoporous Materials and their Application in Sensors , Catalysis and Drug Delivery
- Carbon Nanostructures for Medical Applications (Light Therapy and Drug Delivery)
- Nanostructured Conducting Polymers and their Application for Absorbing and Sensing Pollutants
- Nanostructured Coatings for Corrosion Protection and Thermal Management

2) Biotechnology Program

- Medical / Pharmaceutical Biotechnology: Diagnostics ; Therapeutics
- Industrial Biotechnology
- Environmental Biotechnology: Bioremediation/ Pollutants, Ecosystems.
- Food and Agricultural Biotechnology
- Bioinformatics : Analysis and Interpretation of Biological Data

3) Applied and Computational Mathematics (ACM) Program

- Computational Methods for Ordinary , Fractional and Partial Differential Equations
- Fractional Calculus and Applications
- Dynamical Systems
- Stochastic Modelling
- Quantum Computing
- Optimization
- Applications of Computational Mathematics to Science And Engineering

4) Energy Materials Program

- Physics of Solar Cells Devices
- Physics of Semiconductors for Energy Applications
- Quantum Structures for Optoelectronics
- Physics of Nanoelectronics and Spintronics Materials
- Solar Fuels: Conversion of Light Energy into Chemical Energy
- Nanocrystalline Thin Film Solar Cells
- Nanocrystalline Carbon Quantum Dots for Photoenergy and Medical Therapy
- Thin Film and Bulk Thermoelectric Materials
- Characterization of Novel Semiconductors Materials in Space Missions
- Impact of Radiation on Energy Materials in Space Environment

Faculty of International Business and Humanities

Accounting and Information Systems program

- Financial Accounting and Reporting Systems
- Accounting Information Systems and Data Security
- Auditing and Assurance of Computerized Systems
- Management Accounting and Control Systems

Liberal Arts and Culture Center (Heritage Science)

Conservations Science Track

- Material Characterization, Analysis and Diagnosis
- ICT for Documentation, 3D Modelling, Visualization, Protection and Community Engagement
- Assessment of Conservation Materials, Methods and Procedures
- Preventive Conservation (Energy Saving, Integrated Pest Management, Environmental Control and Disaster Resilience)

Museum Management

- Interpretation of Material Culture in the context of Museum Collection
- Functions of Museum in the Community: Preservation, Research and Education.
- Management and Administration: Accounting, Finance and Human Resources.
- Collection Management, Heritage Utilization and Museum Hospitality

12. Documents Required for Application

The following documents (**SCANNED Copies**) should be attached to the Online Application Form. Once the applicant passes the interview he/ she will be required to submit certified copies (certified by the Egyptian embassy) by **May 31st, 2020**:

1.	Application Form (Signed by Applicant)
2.	Statement of Purpose
3.	CV
4.	B.Sc. Certificate
5.	B.Sc. Transcript
6.	B.Sc. Graduation Project
7.	A letter stating regular attendance in case the B.Sc. Certificate was not acquired in the applicant's home country
8.	Two **academic** recommendation letters

9.	Passport page containing the applicant's name and date of birth (Valid for at least one year)
10.	Personal Photograph (Size 4*6 Cm, upper half of body, full face, Hatless, taken within at least 6 months)
11.	Research Proposal
12.	International TOEFL 79/Academic IELTS 6.5 Applicants whose native language is English are not required to submit official evidence of English language proficiency
13.	Handbook of the university / faculty / institute ….etc. of the certificate for Bachelor degree stating clearly the conditions of registration, conditions of obtaining the certificate and the scientific content of the study curriculum (the part that includes the required information only). It can be obtained from the university website.
14.	Certificate of health (E-JUST designated form)
15.	Security Application (E-JUST designated form)
16.	Endorsement Letter (For Currently employed TAs/ Researchers…etc.)

Note[1]: Original documents submitted shall NOT be returned under any circumstances

Note [2]**:** Any Costs incurred during the selection procedures including travel expenses, documents preparation (official papers, photos, visa application, etc.) and any other personal expenses will NOT be covered but should be paid by the applicant

E-JUST TICAD7 African Scholarship for STI

Terms and Conditions

E-JUST offers **"E-JUST TICAD7 African Scholarship for STI"** to develop high quality human resources in the field of STI (Science, Technology and Innovation) toward future African STI network and beyond. These scholarships are provided under the cooperation of the Egyptian government and JICA (Japan International Cooperation Agency).

No.	Condition	Requirements
1	**Eligibility requirements**	▪ Applicants shall be researchers or instructors who belong to universities or research institutions in Africa who needs to obtain M.Sc. degree in the list of applicable courses as below No. 2 or top-class undergraduate students who are expected to be researchers or instructors by those universities. ▪ Applicant must be a holder of nationality of a country in Africa except for Egypt. ▪ Must have home address and current address in African continents. ▪ Not serving in the military. ▪ Applicants should be under 30 years on September 1, 2020.

		▪ Applicants shall continue their jobs in their home universities or institutions after completion of their postgraduate programs at E-JUST. Endorsement of application forms by their home institutions is required in order to assure they would return to home institutions in future
2	**Applicable Programs**	▪ **M.Sc. of Faculty of Engineering** - Electronics and Communications Engineering Program - Computer Science and Engineering Program - Mechatronics and Robotics Engineering Program - Industrial and Manufacturing Engineering Program - Materials Science and Engineering Program - Energy Resources Engineering Program - Environmental Engineering Program - Chemicals and Petrochemicals Engineering Program ▪ **M.Sc. of Institute of Basic and Applied Science** - Nanoscience Program - Applied and Computational Mathematics Program - Energy Materials Program - Biotechnology Program
3	**Scholarship Term**	▪ The period necessary to complete the degree requirements in E-JUST, which should be within two years + Preparatory Course if applicable for M.Sc. degree
4	**Scholarship coverage**	▪ Tuition fees, accommodation, medical care, monthly stipend and round-trip flight ticket.
5	**Necessary document**	▪ Letter of endorsement by home institutions (for currently employed TAs/Researcher…etc.)
6	**How to apply**	▪ Please check the box "Apply for E-JUST TICAD7 African Scholarship for STI" when you apply online and upload Letter of endorsement by home institutions in addition to above required documents in page 20.
7	**Notes**	▪ The scholarship's support is dependent upon the student good standing with E-JUST graduate program in which he/she is registered. An evaluation progress report will be sent semi-annually to the sponsor reporting about the student's study level, including the student's transcript, academic advisor report, and the updated student research situation. ▪ Scholarships are full-time scholarships; this means that E-JUST students are fully devoting to their study and research in E-JUST and are not allowed to work elsewhere during their scholarships' period.