2023 QS World University Rankings
for 'Citations per Faculty'
6th in the World | **1st in korea**
(for 15 consecutive years)

GIST

At **GIST** which has world-class research capabilities
We are looking for talented people who will
leap together towards **World No.1**

Gwangju Institute of
Science and Technology

Introduction of GIST

A research institute in Korea with graduate and undergraduate programs where passion and knowledge converge to innovative technical solutions for issues and problems affecting the world; also known as the Gwangju institute of Science and Technology

Degree Programs

Master of Science Program(M.S.)	Doctor of Philosophy Program(Ph.D.)	Integrated M.S. and Ph.D. Program(M.S./Ph.D.)

Academic Schools / Departments

School of Electrical Engineering and Computer Science	School of Materials Science and Engineering
School of Mechanical Engineering	School of Earth Sciences and Environmental Engineering
School of Life Sciences	Department of Physics and Photon Science
Department of Chemistry	Department of Biomedical Science and Engineering
School of Integrated Technology	School of Energy Convergence
Artificial Intelligence(AI) Graduate School	

Section of Graduate Admissions, Unit 323, GIST College A(N4), 123 Cheomdangwagiro, Bukgu, Gwangju, 61005, Republic of Korea

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Admission Schedule

Semester of Entrance	Spring Semester (starting from March)	Fall Semester (starting from September)
Application Deadlines	October 13th(Fri.), 2023	April 15th(Mon.), 2024
Documents Review	30 days	30 days
Notification of Admission Results	December 8th(Fri.), 2023	June 4th(Tue.), 2024
Registration of Admitted Students	Dcember 26th(Tue.), 2023 ~ January 5th(Fri.), 2024	June 25th(Tue.), 2024 ~ July 5th(Fri.), 2024

Application&Required Documents(Online Upload)

Website	▪ https://service.gist.ac.kr/admission/graduate/foreigner
Mandatory	▪ Online application ▪ Official degree certificates and transcripts(apostille or notarized) ▪ Two letters of recommendation → Recommendation letters will be received electronically from the referees you register on your system. ▪ An official English proficiency test score report → Minimum scores: 80(TOEFL iBT), 550(TOEFL PBT), 6.5(IELTS Academic), 750(TOEIC), 285(NEW TEPS)
If applicable	▪ A letter of recommendation from your department chair/dean for the Matriculation Fee waiver ▪ A certification of English language proficiency issued from the applicant's last home institution → For Conditional Admission only

Financial Support

Tuition Assistance	▪ Fully supported : 3,415,000 won per semester (One-time matriculation fee of 680,000 won is charged to all newly admitted students to be enrolled)
Monthly Allowance (KRW, per month)	▪ Student allowance M.S. : 140,000 Ph.D. : 295,000 ▪ Meal allowance : nearly 100,000 ▪ International student allowance : 120,000
Research Fellowships (KRW, per year)	▪ Average as of 2022 M.S. : 6,400,000 Ph.D. : 13,740,000
Housing	▪ On-campus Dormitory : Double occupancy ▪ Apartment for Married Students: Two bedroom apartment
Health Insurance	▪ 60% of the National Insurance fee is supported ▪ Annual medical checkup
Flight Reimbursement	▪ Reimbursement for a one-way flight to Korea. ▪ For the first time use only.

*All students are participating in research projects

School of Electrical Engineering and Computer Science

https://eecs.gist.ac.kr

- For the preparation of a future where the global development of creative and innovative technologies will be of paramount importance, the School of Electrical Engineering and Computer Science focuses on the Education and research in the core areas of devices, systems and software along with eight other interrelated research areas.

AI and Robotics

· Machine Learning & Vision

IoT and Cyber Security

· Communication & Information Science · INFONET

Circuits and Systems

· Integrated circuits & Systems
· Analog & Mixed-signal Intergrated Circuit design
· Semiconductor Device Simulation
· Integrated Circuit Design

Signal and Information Systems

· Audio Intelligence technology
· Speech & Audio Processing
· Intelligent Information Systems

Big Data and Cloud Computing

· Data Science · Data Analytics · Cloud Computing

Energy Systems and Sensors

· Microwave Sensing & Imaging

Photonics and Nanotechnology

· NanoSystems
· Advanced Nano Electronics & Photonics Technology
· Photon Information Processing
· Solid-Stated Lighting
· Artificially Intelligent Semiconductors
· MathSymbolica
· Flexible OptoElectronics
· Applied Optics

Biomedical Informatics

· Data Mining & Computational Biology
· BioComputing
· Bioinformatics and Intelligence

School of Materials Science and Engineering

https://mse.gist.ac.kr

- Missions of School of Materials Science and Engineering at GIST are (1) to educate and train talented students as innovative global leaders at the forefront in future materials research, and (2) conduct pioneering, interdisciplinary research in areas of(not limited to) Healthcare, Energy/Green Tech, Connected Mobility(Infortainment), and Artificial Intelligence.

Healthcare

- **Inorganic materials** Flexible electronics/ Electronic skins·sensors/ Bioglass
- **Organic materials** Shape morphic/ Drug delivery hydrogel/ Porous biofunctional materials/ Mixed conductor polymers/ Organic Semiconductors/ Supramolecular theragnostic nanoagent/ Hydrogel/ Conducting polymers·ionogels
- **Biomaterials** Therapeutic protein·nanobiomaterials for drug delivery/ Ionic hydrogel/ Cryopreservation nanoagent/ Tissue engineering·nanobiomaterial/ DNA nanorobotics based theraputics·DNA synthesis/ Drug delivery system· regenerative medicine/ stem cell·theragnosis/ Bio-degradable
- **Composite materials** Bioink·bioelectrode/ Polymer·DNA based microbotics based therapeutics/ Compliant electronics & bio-signal monitoring sensors

Energy / Green Tech

- **Inorganic materials** Perovskite/ Catalyst exsolution·Photo-sensor/ Nanoporous metaloxide heterostructure catalyst/ Hydrogen production materials/ Hydrogen energy related oxides/ Metal halide perovskite/ Solar water splitting· Solar fuel/ Energy storage·Renewable energy materials/ Photocatalysis·Battery anode materials/ Magnetic energy materials·Nano-spintronics/ Harvesting/ Piezo· ferroelectric materials
- **Organic materials** Organic Solar Cell – Small molecule nanostructure/ Carbon capture·conversion materials & catalysts/ Redox-active electrolytes/ Environmental purificaiton polymers/ Flexible organic solar cells/ Flexible organic optoelectronics/ Photodetector/ Photovoltaics
- **Biomaterials** Biocatalytic carbon Recycling/ recovery of rare earth elements/ Implantable energy storage
- **Composite materials** Graphene/ Halide perovskite stability/ Nanostructure energy·green chemistry catalysts & catalytic processes/ Next-generation battery materials/ Fuel-cell materials/ Advanced electrolytes·energy storage/ Metal-organic hydrid catalyst/ Metal oxides/ Photodetector·Photovoltaics/ Flexible energy harvesting devices

Artificial Intelligence

- **Inorganic materials** Neuromorphic device·emerging memory/ memristor synapse/ AI-based catalyst development/ Energy materials based on machine learning/ Deep learning·Computational materials design
- **Organic materials** AI-based organic electronic material development/ 4D printing materials·biomimetic self-assembly
- **Biomaterials** Computational design of therapeutic protein/ DNA-based data storage
- **Composite materials** AI-based hybrid catalyst development/ Security system based DNA & light-responsive materials/ AI-powered intelligent soft actuators

Connected Mobility(Infortainment)

- **Inorganic materials** 3D electronics/ CNT/ Semiconductor·Sensor·Metastructure insulator/ Back end of line(BEOL)·Advanced packaging/ Emerging electronic materials/ 2-dimensional materials/ Thin film transistor·Gas sensor/ Magnetic materials based proximity sensors
- **Organic materials** OTFT/ Switching device·Flexible insulator/ Electromagnetic shielding & absorption/ Triboelectronics
- **Composite materials** 3D electronics/ CNT composite/ Transistor/ Metastructure insulator

School of Mechanical Engineering

https://me.gist.ac.kr

Robotics and Mechatronics	Robots, Lidar/Radar Sensors, Material Devices, Precision Machining Robots, Robot and Human
Next-Generation Vehicle Engineering	Autonomous and Intelligent System, Vehicle Dynamics, Optimization, Smart Manufacturing, Sensor/ Actuator, Information Technology, Aerodynamics, and Unmanned Aerial Vehicles
Thermal Fluids and Energy	Thermodynamics, Fluid Mechanics and Heat Transfer, Automotive and Aircraft Engine Cycles and Aerodynamic Design, Fluid Dynamics and Heat Transfer in Micro-Nanoscale, Thermal Phenomena in Lasers and Micromachining
Multi-scale and Multi-physics Engineering	Clean Combustion Technology, Highly Efficient Motor, Integrated Study, Mechanical engineering problems requiring a micro-and multidisciplinary approach
Smart Design and Manufacturing	Scientific Visualization and 3D printing, Laser Micro/Nano Fabrication, Laser Fabrication and Applications, Prognostics and Health Management of Engineered Systems, Computational Modeling and Simulation with Finite Element Methods, Unmanned Automated Production, Ultraprecision Hybrid Manufacturing Technologies, 4D Printing Research, Design and Measurement Technologies for Micro Systems, Micro Sensor and Actuator Tehnology
Machine Intelligence and Informatics	Deep Reinforcement Learning and Control, Smart AR/VR, Object Recognition and Geometric Data Processing, Smart Multi-Modal Data Fusion, Energy Informatics and Big-Data Based Predictive Analysis, Power Iot for Smart Energy Management, Statistical Machine Learning for Data Channel in Physical Layer, Compressive Sensing and Smart Detection for Machine Systems, System Health Diagnostics and Prognostics, Distributed Consensus for Multi-Agent Machine Systems.

School of Earth Sciences and Environmental Engineering

https://env1.gist.ac.kr

- The necessity of science and technology to overcome the climate crisis, environmental pollution, and energy and resource depletion caused by growth-oriented industrialization and increases in energy consumption
- Contribution to solving global environmental issues as well as local problems through the development of sustainable energy, and the diagnosis and restoration of air, water and soil pollution
- Educating environmental experts much needed in a carbon-neutral era, developing advanced environmental technology, and leading world-class environmental science and engineering research

Sustainable Future Environment Created by the School of Earth Sciences and Environmental Engineering GIST

Earth and Climate Change

- Climate Change
- Air Pollution
- (Ultra)Fine Particle Air Water Soil Pollution
- Marine Resources
- Restoration of Ecological system
- Environmental Satellite

Sustainable Energy

- Electrochemistry
- Energy Storage
- Carbon Dioxide Capture and Storage
- Catalysis Chemistry

Water Science & Engineering

- Water Treatment
- Seawater Desalination
- Membrane
- Hydrospheric Toxicity and Monitoring
- Recycling Technology of Water and Resources

School of Life Sciences

https://life.gist.ac.kr

- Use of innovative research techniques and technological advancement are key to exploring principles that underlie various life phenomena. These may provide a strong foundation for the following : next-generation drug development, identification of causes of diseases, production and design of useful bio-materials, technology for sustainable conservation of biological and environmental resources.
- Going beyond the boundaries of life science academics and implementing a new conceptual framework as a research-oriented university based on convergence studies.

Cell/Molecular Biology

- Cell dynamics imaging and logistics
- Cell aging and clearance
- Genomics and epigenomics
- Tumor metabolism and suppressor
- Gene therapy and new drug targets
- Osteoarthritis research

Biochemistry/Biophysics

- Protein structure and function
- Functional and medicinal proteomics
- Single molecule biology and cellular dynamics
- Membrane protein modulator and drug discovery

Neuroscience / Developmental Biology

- Regulation of neural circuitry and IT control
- Observation of germ cells and gene discovery
- Brain engineering and neurodevices
- Observation of vascular endothelial cells and vascular markers
- Molecular neurobiology

Immunology

- Immune synapse and cell therapy
- Regulation of cancer, autoimmune diseases
- Regulation of inflammatory diseases
- Dynamic interaction of immune system and stem cells
- Tissue regeneration and disease development

Department of Physics and Photon Science

https://physics.gist.ac.kr

- Educating creative scientists the field of physics and photon science
- Conducting In-depth researches in the area of optics, plasma physics, condensed matter physics, and particle physics, etc.

Condensed Matter Physics

- X-ray studies of nano condensed matter physics
- Optical spectroscopy for condensed matter physics
- Surface science using X-rays
- Computational quantum physics
- Quantum information science and technology

Optics

- Ultrafast optics and nonlinear optics
- High Power Lasers and Their Applications
- Attosecond science
- Quantum integrated photonics
- Relativistic Quantum Photonics

Particle Physics

- Field theory and string theory
- Gauge/ gravity duality
- Gravitational understanding of strongly correlated system

Plasma Physics

- Intense laser and matter/Plasma interactions
- Particle acceleration and coherent radiations by laserplasmas
- High energy density physics
- Laser fusion

Department of Chemistry

https://chem.gist.ac.kr

- We are building a new model for department of chemistry with five focused research areas, Organic, Inorganic, Physical, Biological and Analytical Chemistry.

Inorganic Chemistry

- Synthetic modeling of metalloenzyme active site
- Organometallic catalyst development
- Hybrid molecular material catalyst for the solar fuels research
- Development and Analysis of Surface Chemistry on Two-dimensional Nanomaterials
- Precise synthesis of plasmonics nanostructures and their applications

Physical Chemistry

- Photochemistry
- Time-resolved molecular spectroscopy
- Biophysical chemistry of cells and biomolecules Development and application of quantum chemical simulation method using AI
- Computational study on water structure and dynamics

Organic Chemistry

- Synthetic methodology and catalyst development
- Natural product synthesis
- Medicinal chemistry and drug discovery
- Molecular sensors and High-throughput screening
- Peptides and peptidomimetics

Biological Chemistry

- Protein structure by X-ray crystallography
- Biosensor and biophotonics for diagnosis, theragnosis and food safety
- Multidimensional NMR spectroscopy for proteinligand interactions

Analytical Chemistry

- Surface Analytical Chemistry
- Nanoscale Material Chemistry
- Biosensors and Bio-Instruments

Department of Biomedical Science and Engineering

https://bmse.gist.ac.kr

- As a new multidisciplinary research and education program, Department of Biomedical Science and Engineering(BMSE) was established in spring 2008 with the mission of promoting fusion researches in Biomedical Science and Engineering applications.
- All faculty members of BMSE are recognized as world-class researchers in their special areas. The ongoing research topics are in the field of biomedical science and engineering such as optical system design for biomedical applications, neuro signal analysis, neuromodulation, study on sleep and consciousness, peroxisome and lipid metabolism, genomic medicine, and so on. BMSE invites extremely energetic applicants pursuing advanced degrees(M.S.,Ph.D.) in multidisciplinary biomedical science and engineering. Specially, candidates who have Western or Oriental M.D.s as well as engineering or science backgrounds are strongly encouraged to apply. With world-class faculty members and collaborating physicians in affiliated hospitals, we provide BMSE students top-class educational opportunities to become future professor, physician scientist, biomedical researcher or CEO/CTO in medical fields and clinic.

Convergence Technology

Immune & Metabolism

- Post-transcriptional Regulation of Immune System
- Anti-cancer Microbiome
- Regulation of Metabolic Stress
- Lipid Metabolism Dysfunction Ocular Immune Privilege and Immune Regulation

Biophotonics

- Neurophotonics
- Photomedicine
- New Generation Biophotonic Imaging

Brainscience & Neuroimaging

- Neuromodulation
- Neural Circuit Connectomics
- AI-based Brain Imaging &Signal Processing

School of Integrated Technology

https://iit.gist.ac.kr

A Proud Creator of Future Science and Technology

Graduate Program of Culture Technology

- Application of Computational/Information Technology to various cultural-related fields such as humanities, education, and art entertainment

Research Area

- Media Technology (Computer Graphics, AR/VR)
- Intelligent Interaction Technology (AI, HCI)
- Cultural Content Design (Game, Art&History)

Graduate Program of Intelligent Robotics Technology

- Specialized in healthcare and medical robots
- Global technology leadership in rehabilitation and nano-robot fields
- Presenting human-computer interaction and human-centered future environmental solutions that bring in human and artificial intelligence technology
- Artificial intelligence research and development that can be used to a variety of robotic fields(robot vision, manipulation, swarm control, cloud robotics etc)

Research Area

- AI robotic applications
- Cloud AI platform for Robotics
- Human-Computer Interaction(HCI+AI Mixed Reality Future Mobility)
- Medical Robots(Nanorobots, Wearable and Rehabilitation robots)
- Sim-to-Real(Synthetic Data Generation via Simulator, Domain Adaptation) for robot vision and manipulation
- AI-based Robot Control(Autonomous Navigation, Autonomous Medical Robot Manipulation, Intelligent Human-Robot Interaction)

Graduate School of Energy Convergence

https://flexenergy.gist.ac.kr

- Fostering versatile students specialized in Improvement of energy system flexibility
- Development of integrative thinking skills based on a multidisciplinary environment
- Training professionals with unique academic capabilities and practical engineering skills

Educational Objectives

Training of versatile students

· Improvement of energy system flexibility
· Problem solving ability
· Practical engineering skills

Accelerating growth of new industries

· Patent/Technology Transfer
· Fostering startup
· Networking with enterprises

Research

Graduate Program of Energy Convergence

Driving innovation in energy technology through innovative research in renewable energy, eco-friendly hydrogen/electric vehicles, and smart power grids

· Energy Conversion and Storage
· Power Electronics, Power System, Power Economics
· Energy Informatics
· Sustainable Energy (Nano Materials and Energy Environments)

Artificial Intelligence(AI) Graduate School

https://ai.gist.ac.kr

- Creative fusion research leading AI core technology based on X+AI and cultivation of empirical experts
- Providing a test bed environment for substantiating Dreaming Child (AI) including a supercomputer uniquely registered in Top 500 among the domestic educational institutions

Educational Object

Integrated Course 1~3

Teaching Yourself
Self-Directed, Education by E-Learning, Flipped Learning, PBL

Recreation
Recreational Education as TED-Style AI Concert and AI Industrial Field Trip

Adaptation
AI Adaptation Education via Top AI Conferences and Lectures by World Class AI Researchers

Integrated Course 4~5

Industrial Mindset
Industrial Experience Education by AI Industry Internship and Project Participation

New Value
New Value Creation through Multidisciplinary Convergence and Industrialization

Research Area

Generalizable
Flexible and Robust AI for Dynamic Environmental Change

Integrated
Learnable, Perceivable, and Inferable AI Integrating InterDomain Big Data

Safe/Swift
Safe and Swiftly Inferable AI by Solid AI Infrastructure and Advanced Software Technology

Transferable
Integrated and Transferable AI over Interdisciplinary Domain

G.I.S.T. AI for X