[KIST] Study Proposal of International Admission for 2020 Fall Semester

No.	Major	Sub-Major	Research Group (Team)	Study and Research Proposal
1	Division of Bio-Medical Science & Technology	Biological Chemistry	-	Understanding the life phenomenon based on the fusion of chemistry and biology and application into researches for treatment and diagnosis of various diseases. - Study of mechanism of cancer, cardiovascular disease, inflammation□□ - Development of biomarkers□□ - Discovery of drug action point□□ - Discovery of bioactive small molecules and drug candidates□through organic synthesis□□ - Development of functional substances and new drug candidates using natural products□□ - Development of biosensors
2	Division of Bio-Medical Science & Technology	Neuroscience	-	The neuroscience program is committed to the prevention and treatment of brain disorders and the systematic understanding of brain function through the multidisciplinary research approaches at the level of genes, cells, circuits and animal behavior. -Development of markers for cellular activity -Monitoring of cell population activity and developing new theoretical tools for data analysis -Modulation of synaptic function in animal models of brain disorders -Discovery & modulation of new neuronal circuits for brain function via neuronal connectomics, optogenetics, and pharmacogenetics -Understanding the relationship between brain and factors such as metabolism, inflammation, addiction and etc. -Development of new cell therapy to brain disorders based on adult neurogenesis

No.	Major	Sub-Major	Research Group (Team)	Study and Research Proposal
3	Division of Bio-Medical Science & Technology	Biomedical Engineering	-	Biomedical engineering (BME) integrates traditional engineering, biology, and medicine. While combining engineering and biological approaches, BME explores an interdisciplinary, innovative solutions to incurable diseases and body impairment in medical field. Major research topics are stem cells and tissue engineering, 3D vasculature in vitro, biodegradable metal, medical device (stent, cardiac patch, etc),nanoparticle-based biosensor, target-oriented cancer drug delivery, immunotherapy, biosenor, organ on-a biochip,□medical imaging, robot-assisted rehabilitation, non-invasive medical device for brain disease
4	Division of Energy & Environment Technology	Energy Engineering	-	To realize a clean and sustainable future society, we study basic and applied technology related to the production, conversion, storage, and delivery of environment-friendly energy and chemical. Detailed research field includes biomass to energy, solar energy, fuel cell, batteries and system engineering.
5	Division of Energy & Environment Technology	Environment Engineering	-	For the safe and sustainable environment, we study basic and applied technology related to various environmental issues. Detailed research fields include water resource management and process engineering, treatment of soil and ground water, energy production using wastes, air pollution monitoring and modeling, diagnosis and control of environmental pollution, and environmental health risk.

No.	Major	Sub-Major	Research Group (Team)	Study and Research Proposal
6	Division of Nano & Information Technology	Nanomaterials Science & Engineering	-	Nanomaterials technology (NMT) major aims at providing prospective professional researchers with higher education that can cultivate specialized backgrounds and R&D competences required to formulate significant problems in engineering applications of nanomaterials and to explore successfully the solutions thereof based on understanding of nonlinear, unusual or new properties of materials with respect to their nano-scale structures. In order to achieve this goal, NMT major offers a course curriculum to teach basic knowledge that can be used for forming and characterizing various nano-structured materials such as quantum dots, nano wires, nano films and nano particles and for analyzing their structure-property relations. More importantly, NMT major provides strong laboratory-based education that allows students opportunities to acquire, to exploit and even to create knowledge from their own spontaneous and direct experiences by participation in research projects of different kinds such as; basic researches pursuing fundamental understanding of the properties of nanostructure materials, advanced researches developing stand-alone NT technologies or fusion technologies with IT (information processing, storage, display, sensing and so on), ET (energy conversion, storage, environmental technology) or BT (bio technology). The faculty of NMT major comprises researchers of established or promising careers,□ conducting R&D for creative original technologies or core technologies of nanomaterials.
7	Division of Nano & Information Technology	HCI & Robotics	-	In HCI & robotics program, we□are studying□fundamental theories and technologies in the major subjects of HCI and Robotics, such as immersive virtual reality, physics based simulation, media and internet technology, multimodal perception and interaction, robot perception and actuation, knowledge representation and reasoning, human-robot interaction, and mechanism design. The students□in the program are also expected to gain practical experience to meet the challenge of future cutting-edge technology by participating in national projects in HCI & Robotics.