

Graduate School of Medical Science and Engineering

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■ Overview

Graduate School of Medical Science and Engineering (GSMSE) runs a doctoral program focusing on basic medical science and medical engineering for graduates of medical schools (M.D. holders). The two areas of specialization are basic medical science and medical engineering. M.D. scientists who complete the basic medical science track can not only develop new therapeutics by analyzing diseases at the molecular level, but also identify new diseases, thereby playing a pivotal role in creating a healthy society with increased life expectancy in the 21st century. Those who complete the medical engineering track will be able to utilize basic medical knowledge for the development of medical devices and equipment. In addition to developing new diagnostic and therapeutic approaches, they will mature into leaders of the medical industry, deriving greater bio-value and enhancing national competitiveness.

GSMSE strongly encourages interdisciplinary cooperation among its diverse faculty from various related departments such as the Department of Biological Sciences, Department of Bio and Brain Engineering, Department of Physics, Department of Chemistry, Department of Chemical and Biomolecular Engineering, Department of Nuclear and Quantum Engineering, Department of Materials Science and Engineering, Department of Mechanical Engineering, School of Electrical Engineering, and School of Computing. Faculty of medical schools outside of KAIST are also serving as adjunct or invited faculty. Students who join the program work towards a Ph.D., and those with a B.S. degree will be admitted to the integrated master's and doctoral program, which has the same graduation requirements as the doctoral program.

■ Academic and Research Activities

Medical research conducted by GSMSE is aimed at laying a foundation for the development of new therapeutics by examining the mechanism behind various diseases. The types of diseases covered by research include vascular diseases, infectious diseases, autoimmune diseases, metabolic disorders such as diabetes and obesity, neurological disorders, genetic disorders, and rare diseases. To support research activities undertaken by graduate students, the graduate school offers funding for dormitory fees. Most graduate students receive a scholarship from the government or a research grant for participation in an industry project. Alumni can be found working in universities, hospitals, national research institutes, and related industries, making significant contributions to the development of basic and applied fields of medical science. Their excellence and commitment have helped to secure a brighter future for GSMSE.