

FSM Description of Courses

GG504 Science of Climate Change

This course provides a comprehensive introduction to the causes and consequences of climate change, including the scientific evidence and social, economic, and environmental impacts. The course will examine the basic physical processes that determine Earth's climate, the history of climate change, and the current state of knowledge about global warming. The course will also examine the challenges and opportunities associated with mitigating and adapting to climate change, including the role of technology, policy, and economics.

IP410 Law, Technology and Innovation

This course is designed to provide science/engineering students with fundamental understanding on key issues regarding high technologies, their impact on corporate innovation and their legal environment. Extensive case studies on exemplary global companies that already developed and is practicing IP management strategies for profit maximization will guide the students to gain strategic IP management techniques utilizing legal knowledge on patents, trademarks, designs, trade secrets, and copyrights to create substantial value for corporate innovation through state-of-the-art technologies.

FSM201 Introduction to Future Strategy

The purpose of this course is to enhance the capacity to devise creative alternatives and solutions through strategic responses to structural changes and uncertainties in the future. It aims to envision a desirable 'future' that individuals or organizations aspire to by introducing fundamental concepts and methods constituting strategic future forecasting, along with history and processes. Additionally, it provides an overview of the key processes and methods of strategic future forecasting.

FSM301 Quantitative Forecasting Methodology

The main goal of this course is to understand various time series and AI (Artificial Intelligence) forecasting models for times-series analysis including regression, exponential smoothing, ARIMA model and ARCH/GARCH model. This course also requires programming exercises in R or Python. By the end of the unit, students will be equipped with appropriate forecast modeling and statistical analysis skills to contribute to forecasting research projects.

FSM401 Population and Future Strategy

This course analyzes the causes of low birth rates and aging populations, as well as countermeasures. It studies the socio-economic impacts of demographic changes, examining challenges and future response strategies in various fields such as the decrease in national defense personnel and school-age population, and the economic effects of a shrinking working-age population. It also assesses the uniqueness of Korea's demographic crisis through comparisons with several other countries.

FSM402 Future Strategy from a Complex Systems Perspective

Rapid advancements in transportation and communication technology have made society increasingly complex and interconnected. Through interactions between constituent entities such as nations, corporations, and individuals, flows of capital, information, disease, and knowledge occur. Understanding these interactions has become important. The complex systems theory aims to understand systems composed of numerous interacting entities. Therefore, the need for complex system theory has emerged in prospecting and formulating future strategies for society. This lecture aims to acquire basic knowledge of complex systems and learn about the possibility of developing future strategies using complex systems theory.

FSM403 Future Media and Communication

This course aims to understand the principles and effects of media and communication that connect people and discuss their evolution into the future. It covers acquiring theories about the characteristics and mechanisms of media industries, as well as their social effects. Additionally, it discusses the direction in which future media will progress and addresses topics related to user acceptance, adoption, and resistance.

FSM404 Humanitarian Science: Future Crisis Prediction and Response

Despite changing global environments and evolving challenges, humanitarian systems have remained largely unchanged. This course explores the potential of new science and technologies to address contemporary and future humanitarian crises, including climate change, global conflicts, food insecurity, pandemics, global health issues, population transitions, and human mobility. Students will gain a multidisciplinary understanding of up-to-date science and technologies to respond to global challenges, with a critical examination of technologies' impact on humanitarian actions and international development. The course will focus on the role of machine learning and AI technologies in addressing complex global crises, with an emphasis on reaching disadvantaged societies. It will also foster critical reflection on the political, social, and economic aspects of technological disparities in humanitarian science and policy.