

[GFS] Course Description

GFS501 Information Technology Strategy

This course is designed to provide students with fundamental knowledge in advanced information technology to present the development direction of the future. Internationally outstanding professor(s) will guide students to the basis for professional intellectual property and R&D through essential knowledge and new information. Students will learn and estimate the key technologies of information communications.

GFS502 Environmental Technology Strategy

This course is designed to learn introductory concepts on environmental technology under the context of global collaboration to present the development direction of the future. Professors with international reputation on this field will provide essential knowledge, latest trends and future strategy to students. Especially, potential solutions are proposed for the inter-connected problems of energy, environment, water, and substantiality which are global agenda in the 21st century and should be solved collaboratively

GFS503 Bio Technology Strategy

This course intends to provide surveys through which students can acquire the up-to-date knowledge and understanding on bio-medical technologies to present the development direction of the future. Professors with international reputation on this field will provide essential knowledge, latest trends and future strategy to students. Based on such knowledge and understanding, students can get insights on how to deal with those technologies in various lines of their work in the future.

GFS504 Nano Technology Strategy

This course is designed to learn introductory concepts and present the development direction of the future on Nano technology. Professors with international reputation on this field will provide essential knowledge, latest trends and future strategy to students. In order to acquire the basic knowledge of Nano Technology learn details of the theory and development. Students will get development direction and strategy for nano technology and industry through various cases.

GFS505 Convergence Technology Strategy

This course introduces the convergence technology among Information Technologies, Bio Technologies, Environment Technologies, and Nano technologies. The basic principle of the convergence technology will be studied, and their industrial applications, technology trends, strategies are also dealt with some cases.

GFS506 Foresight Methods

This course overviews various methods on foresight including Delphi, Scenario, Trend, Emerging issues, Three dimensional methods. The methods are compared with application examples, and pros and cons of each method will be discussed.

GFS601 Leadership&Communications I

This course provides students with essential knowledge for futurology specialists; hence it

introduces the overview of lectures on futurology and future strategy, and various related viewpoints, attitudes, and major issues. Furthermore, the future status, roles, and jobs of the students graduated from the KAIST Graduate School of Future Strategy will be covered.

GFS602 Leadership&CommunicationsII

This course provides students with basic leadership necessary for successful social activities and practical examples. The purpose of this course is to forecast various changes (politics, economy, society, environment, culture, and religion) of human society as a result of science and technology evolutions, and to deal with communication methods for people and media together with responsible attitudes on the changes. Moreover, scientific writing of thesis and powerful writing of reports are introduced.

GFS603 Climate, Water, Food, Energy, Economy Nexus

Climate change, the environment, energy, food, water, disasters, and so on are core factors which have an effect upon future society. In this course, state-of-the-art studies associated with causes and impacts pertaining to interaction between natural variability and human activity will be reviewed, and a fundamental basis of knowledge in those domains will be taught. Basically, each lecture will consist of a seminar by a world-renowned scholar, a follow-up explanation, and group discussion.

GFS608 Maritime Security Strategy and Policy of ROK

From a maritime strategic viewpoint, this course studies maritime security in the Indo-Pacific region. To this end, this course first analyzes the competition for maritime hegemony between the US and China, including the geopolitical characteristics, different perspectives on the UN Convention on the Law of the Sea, and the origins of the conflict between the two countries. Additionally, it also tries to further understand maritime security situations of the region by analysing North Korea's naval threats, Japan's active maritime security policy, and the Russo-Chinese strategic ties and so on. In so doing, the course is to seek for a desirable maritime security strategy and policy direction of South Korea.

GFS611 Introduction to Global IP Law

This course is designed as an introduction to mandatory courses regarding global IP laws and management issues. It will provide students with key global IP law knowledge focusing on the Federal IP laws of the USA. It will cover key legal issues of patents, trademarks, designs, trade secrets, and copyrights through diverse classroom activities including lectures, case studies, and group discussions.

GFS612 Global Patent Law

This course is designed to address key patent law issues that are regarded essential to survival and prosperity of businesses and nations today. Patent law is the area where fundamental principles of IP laws and critical issues for today's business activities are concentrated. This course will guide students to study key issues through lectures on key legal principles and responsive case studies regarding the US patent laws and practices.

GFS613 Global Copyright Law

This course will provide fundamental knowledge on copyright law of the USA. Students will be exposed to the key provisions and leading court decisions. The topics include:

authorship, fixation, idea-expression dichotomy, infringement, fair use, remedies, work for hire, first sale doctrine, digital copyright, Digital Millennium Copyright Act, etc.

GFS614 Global Trademark Law

This course is designed to address key trademark law issues that constitute legal backdrop of brand management whose importance is growing in conducting business activities. This course will provide students with opportunity to study key trademark issues of the United States, where global enterprises compete against each other fiercely, though diverse classroom activities including lectures and case studies.

GFS615 Global Design Law

This course is designed to address key design law issues that are regarded essential to survival and prosperity of businesses today. Apple's success through its iPhone and iPad in the global market implies that development and protection of eye-catching product design is becoming the key success factor for companies today. This course will guide students to study key issues through lectures on key legal principles and responsive case studies regarding the US design patent laws and court decisions.

GFS641 Global Issue: Food, Life, and Disease

Understanding and control of cancer and contagious disease are essential for sustainable prosperity of human-being. This lecture deals with diagnosis and treatment of various diseases and production and distribution of food resources under the context of most recent development of genetic engineering and advanced analytical tools.

GFS642 Science Journalism Theory

This class will introduce various theories acquired during science journalism research, introduce each field of science journalism, while pursuing acquisition of new theories and knowledge.

GFS643 Research Methodology in Science Journalism

This course aims to increase understanding of various research methodologies related with mass media. Particularly, it provides essential concepts and statistical knowledge to help in writing master's thesis in science journalism.

GFS644 Future Strategy

In this course, we will estimate the change of future society in the 21st global era and highlight important science and technology for solving the emerging issues that the earth and mankind are encountered. Moreover, the role of science culture in the era of fusion will be introduced. We will invite strategists from various fields, have relay lectures, and discuss with the lecturers. The purpose of this lecture is to search for grand development strategies for the future of Korea throughout the class.

GFS671 Introduction to Futures Studies

This course introduces the futurology to research the Earth and future of mankind scientifically. The needs, goals, and limitations of the research on futurology, together with worldwide research history and status of futurology are explained. Especially, not only the probability but also the desirability of future are dealt with. To meet this, the cognitive

uncertainty as well as normative uncertainty are dealt with. Throughout this course, the direction of Korea futurology research is examined.

GFS672 Strategic Foresight for Future Challenges

This course overviews the future issues and challenges which we are facing now and future. For example, the technological innovation paradigm, climate changes, energy food and water, demographic change could be the examples. Additionally the key concept related to futures and strategic foresight will be discussed.

GFS673 Research Methods on Futures Studies and Strategy

This course introduces what to be studied about the future and how to approach them. The course focuses on finding, building hypothesis and planning for verification of futures strategies and futures policies based on logical uniformity, practicality and scientific rationale. Next, the course will seek to devise new futures research method appropriate for Korea.

GFS674 Changing Structure of Future Society

The major driving forces for future social changes include advance in science & technology, demographic change, climate change and resource depletion, and the order of international economic and political change. Each driving force (or macro-trend) itself has a strong influential power and creates new future challenges and opportunities through interact with each other. At first, this course overviews theories and methodologies of social change and foresight, and then, it explores a variety of factors that may lead to future environmental changes both at home and abroad. Next, it forecasts future social changes that will be caused by the factors and draws their implications in the Korean context.

GFS675 Foresight in Practice: Process and Methods

Research results on futures research quality cannot be dichotomically evaluated as correct/incorrect. The quality and reliability of futures research results depends on how detailed the overall process has been constructed, and how methodologies and toolkits have been adequately selected on each stage of research. This course focuses on practicing foresight based on foresight theories and methodologies. Throughout the course, students will learn, understand and adapt to changes in society and learn to tailor changes in need.

GFS701 Quantitative Research Methodology

This is an introductory graduate level course on research methods. Together, students will examine a variety of issues on statistics, quantitative research methods, data analysis, and others. This course provides mutual learning experiences by active engagements of all members of the class. Students' engagement and contribution should be based on students' thorough reading, comprehensive understanding of the materials, and imaginative thoughts on a variety of social, technological, and future problems.

GFS702 Advanced Statistics for Future Strategy

The course develops methods for analyzing statistical relationships. Techniques studied in the course are useful for a variety of applications in social science and others areas. The

course emphasizes formulating models and using them for decision-making prediction. Topics include estimation, hypothesis testing, regression analysis, analysis of variance, nonparametric. The course involves extensive hands-on work with statistics software. Also a term project is required as teamwork. For all the issues, both theoretical and practical aspects through case studies will be emphasized. After completing this course, students are expected to make practical use of modern data analysis, and appreciate the need for, and limitations of, real world data.

GFS703 Social Science Research Methodology

This is an introductory graduate level course on research methods. Together, students will examine a variety of issues on research methods including research design, experiments, quasi-experiments, survey development, qualitative and quantitative research methods, and others. This course is explorative and thought-provoking mutual learning experiences by active engagements of all members of the class. Students' engagement and contribution should be based on students' thorough reading, comprehensive understanding of the materials, and imaginative thoughts on a variety of social, technological, and future problems.

GFS801 National Future Strategy

This course introduces national vision and development plan based on the 30-years-long-term future perspective. Major factors comprising a nation such as national security, economy, society, politics and administration, science and technology are included in the plan. 'Korea National Future Strategy Report', being prepared by KAIST, is also introduced.

GFS802 Big Data Mining

This course introduces the principles and practical techniques on the big data mining together with complex system dynamics which are highlighted as new techniques of futures studies in the complicated information-knowledge society.

GFS803 Special Lectures on Futurology I

This course introduces recent theories on futurology or new approaches and methods in futurology. Globally or domestically rising new futuristic issues and social/technological important issues are also covered. Outstanding futurists and interdisciplinary lectures are included.

GFS804 Special Lectures on Strategies and Policies

This course introduces new theories on future strategy or newly highlighted public policies. Socially important and impact issues in terms of future strategy are extensively analyzed and alternatives are explored. Practices on the development of future strategies and policies required for central/local governments, cooperations, and many organizations are also provided.

GFS805 Special Lectures on Futurology II

This course introduces recent theories on futurology or new approaches and methods in futurology. Globally or domestically rising new futuristic issues and social/technological important issues are also covered. Outstanding futurists and interdisciplinary lectures are included.

GFS980 Thesis Research(Ph.D.)

This is a research course for writing thesis and conducting individual research. This course provides an opportunity to converge futures strategy technologies along with expert knowledge of respective fields under advisory professors and collaboration works. The research topic transcends diverse fields of futures strategy. Advisory professors supervises research and they can conduct special lectures on research methods and colloquiums if considered necessary. Students can also set up student-led courses and host special lectures and colloquiums

GFS987 Seminar (Ph.D.)

This seminar is for Ph.D. students on futures strategy, intellectual property and scientific journalism. The seminar invites the experts on the related field to give talks, and to carry out in-depth discussions. This course is conducted under dissertation advisor or delegated advisors in groups.