Course Descriptions

❏ Graduate Course

GCT501 Introduction to Culture Technology
This course discusses the basics of culture technology (CT). While culture technology refers to the technology for digital contents such as games, animation and movies, we extend its scope to the technology for various cultural artifacts, even to the technology for our everyday cultural activities. We shall also discuss how the traditional 'analog' cultural problems may find their effective solutions by incorporating the 'digital' approach.

GCT503 Culture Technology Project I
This course is designed to develop CT design project through analyzing product analysis, planning and design, and computing. The experts in CT digital media industries are included as team-teaching members. Students conduct a new design project based on multidisciplinary team.

GCT602 Culture Technology Project II
This course is a doctoral CT project course that each researchers study profound researches of interest fields of their own. To understand the basic concept of design practise and study planning and practise of design, industrial-educational projects or interdisciplinary cooperation projects will be conducted for nurturing project design capabilities.

GCT 511 Digital Aesthetics
The objective of this course is to give the overview of the theoretical foundation in the field of the aesthetics and philosophy of media. For this purpose, we shall reconstruct the history of various theories of media through three generations (from photography over broadcasting to computer), followed by the discussion on the relationship between the new media and modern arts. Toward the end of the course, we will investigate how informational and bio technologies have facilitated the subversion of the traditional ontology of the world and the human.

GCT522 Computer Graphics Theory and Application
This course is designed to study theories, techniques and application methods of Computer Graphics and Virtual Reality. It covers the general overview and the history of Computer Graphics and Virtual Reality, the theories and techniques of graphics programing, analysis of 2D & 3D computer graphics softwarea applications, computer vision, telepresence, mixed reality, network VR, multimodal human interface, and haptic interface. Application systems of CG and VR are also introduced to allow the students to build a new system.

GCT523 Computing for CT
Fundamental programming concepts are presented together with supporting theoretical bases and practical applications. This is a list of topics will be covered in this course: Java classes, GUI and object-oriented programming, data structures for lists, tress, hash tables, and graphs; sorting and searching; and several algorithmic methods such as divide-and-conquer, tree and graph traversal methods.

GCT524 Animation
This course will cover tips and techniques which are needed to make 3D animation films. Students will analyze problems from production pipeline such as layout, character setup, animation and study techniques how to make 3D animation.

GCT531 Theater Music and Design
Throughout the 400 year-long operatic history, there have been representative operatic stage design concepts which reflect the socio-cultural atmosphere of each period or time. This course attempts to examine the cultural and aesthetic foundations for the new performing arts design concepts of the 21st Century.

GCT532 Acoustical Instrument Design and Evaluation
Study acoustics from a variety of perspectives, including physics, mechanical engineering and mathematics, as well as review the history of musical instruments. Design, build, then evaluate the sound value of built instrument using measuring techniques and equipment through various experiments. These processes will give a basic understanding of sound, as well as an understanding of the foundation, motivation and direction of future sound in the 21st century.

GCT533   Sound Design and Programming
This course is concerned with the basis of sound control and synthesis. MaxMSP is a graphical programming language created for use by sound designers, musicians and artists. Particularly useful is the real-time flexibility of audio processes and the ability to control the computer using midi instruments, sensors, networks and so on.

GCT534   Performance Planning and Management
Understanding correlations among major factors in public performance such as thematical performance, performer selection, stage management, performer-audience communication, performance marketing and the optimization of cost-efficient planning.   The focus of this class will be to experience a variety of performing forms but in orthodox forms while learning the proper skills to manage an actual performance from a practical point of view as planned through the aforementioned process.

GCT535   Sound Technology for Multimedia
This project-based course deals with both theory and practice of digital audio technology. Topics include the basic concepts of sampling, spectrum, sound analysis/synthesis, digital audio effects, psychoacoustics, and data mapping strategies for cross-modal display. Students will learn how to utilize sound to create/ understand information and art.

GCT541   Human-Computer Interaction
The overall process of analysis, design, and implementation of human-computer interaction is considered. Topics include reflecting cultural context and user needs, analyzing tasks, designing user interface, utilizing related advanced computer technology.

GCT542   Game Technology
Whereas Game Design course (GCT543) deals with non-technical aspect of game development, this course deals with various technological aspects in game development, such as computer graphics, AI, physical simulation, networks, and software engineering.

GCT543   Game Design
This course covers the entire of processes of game design - from preliminary concept design to prototyping. The course begins with the essential properties of gaming, and proceeds to the discussion on each game design process. Students will learn the essential knowledge by working on game protptypying

GCT551   Digital Design
This course is designed to study fundamental design theories, principles and visual languages for creating digital media and contents. Through the course, students will acquire skills of developing creative design ideas using various visualization techniques. Students will also experience a basic digital media and contents design practice.

GCT552   Information Design
This course is designed to study the way of organizing visual information and evaluating its usability. Emphasis is given to the capability of managing information architecture and developing creative information design.

GCT553   Digital Contents Design
This course is designed to investigate theories related to the structure and process of digital contents. Emphasis is given to build creative business models of digital contents based on the characteristics of new media.

GCT554   Digital Architecture

GCT561   Scientific Concepts and Thinking
This course attempts to introduce and to nurture the essential concepts and knowledges in science and technology so that students develop the scientific minds for understanding, designing and solving various cultural and artistic problems. This course is primarily for the students with various non-science backgrounds.

GCT562   Artificial Intelligence
This course teaches the core concepts and various techniques in artificial intelligence so as to the students can build the intelligent systems. The course covers the following topics: knowledge representation, logic and inference, search, learning, neural nets, artificial life, pattern recognition, natural language processing and computational vision.

GCT563 Robotics

GCT571 Language Theory and Culture Technology
A study to the text & language and multimedia in the context of the complex interactions of culture and technology. This course offers both theoretical approaches and case studies of these interactions from diverse domains, including computer science, linguistics, information technology, and mass media. On the basis of the study, we can learn the relation between human and machine, and the method of managing and using the language resources.

GCT572 Computer-mediated Communication
Introduction to the internet, language and communication in the context of the complex interactions of culture and technology. This course offers both theoretical approaches and case studies of these interactions from diverse domains, including computer science, linguistics, information technology, and mass media.

GCT574 Story Design
Nowadays Storytelling is adapted to PC game, web content, advertizement, marketing as well as traditional story art such as novel, drama and movie. There are many stories in our time, but good stories are so rare. This course offers theories and techniques of good story well told.

GCT581 Cultural Economics
The aim of this course is to learn the economic analysis on arts and culture including the public good characteristics of art and culture, the demand for and supply of cultural goods, the concept of cultural capital and its impact on economic development in order to be able to discuss and derive policy implications.

GCT582 Culture Content Industry
This course deals with cultural content industry field such as film, animation, game, edutainment and digital media, etc, particularly focusing on applying established scholarly tradition theories and discourses to cultural content industries. The purpose and output of this course is for empowering ability to set up and improve your analysis and predictability toward cultural content and its industry. Participants must implement case studies with applicable discourses which is provided for this course.

GCT583 Organizational Management in Culture Industry
Incorporating cultural factors and technologies into the cultural industry has become commonplace. As the result, tension inside an organization builds up as people with various backgrounds must co-exist and collaborate with each other. In this course, we shall study various ways to deal with such cultural issues in addition to the traditional organizational theories.

GCT584 Cultural Intellectual Property
This course begins with the historical perspectives on intellectual property, and proceeds to the new development in IP due to the recent technological advances, especially the rise of digital technology. Special attention will be given to the digital contents.

GCT585 Research Methodology for Culture Management
Culture Management Statistics overview of how the cultural industry have been marketed in the Korea. Examines current issues in cultural industry and developments management strategies. Topics will include theories of cultural economics and statistic methods of economic analysis. Students will learn how to solve the problems of cultural industry.

GCT611 Digital Heritage
Digital heritage, or cultural archetype refers to the knowledge and technology concerned with the recovery, reconstruction, preservation and production of cultural heritage with the aid of the digital technology. This course emphasizes how we utilize digital heritage in order to create cultural contents.

GCT621 Computer Graphics Technology
This graduate-level course in 3D graphics deals with the in-depth theories, algorithms and implementations. Major topics include: modeling, motion control, (local and global) rendering, augmented with the advanced issues reflecting the recent developments in graphics.

GCT622 Digital Creatures
This course will give an overview of major research topics in digital human technology, such as facial animation, motion control, physically-based modeling and animation, modeling emotions and intelligent behaviors. Emphasis is on the computational techniques required to the simulation of human characters.

GCT631 Computer Music
This project-based course deals with both artistic and technical aspects of music generated or composed with the aid of computers. Topics include the historical background of music and technology, algorithmic composition, psychoacoustics, sound synthesis, and various issues on multimedia and networked performances. Students will learn modern composition techniques and utilize them to create their own music.

GCT632 Digital Performance
In this course, we will survey the recent trends of Interactive Arts, and will experiment on expressive technology by various methods. Interactive programming is a central component of the work, and opportunities for advanced work in interactive sound and image in performance settings. This course is a program in collaborative, experimental, practical artistic production. The goal of the course is to play KAIST-like digital performance on the stage.

GCT633 Audio and Multimedia Programming
This course deals with various topics of audio/multimedia programming. We explore the basics of programming tools and environments, software libraries, graphic user interface design, audio plug-in architecture, audiovisual integration, and control/communication over network.

GCT641 Ludology
This course offers diverse theories on ludology. Students can study history, genre, element and cultural implement of game. This course also provides new game aesthetics; immersion, agency, quest, etc. Analyzing games in various standpoints, students can design new game format as well as predict future game business.

GCT642 User Interface
Studio course to study interaction design practice including GUI, User-Interface for digital information appliances and Contents based Product. Students are to learn systematic interface design process by experiencing various methods such as user's mental model, user-observation, scenario-based design, task analysis, and usability testing.

GCT644 Game Planning and Production
Whereas the related courses - Game Design and Game Technology) deal with the game planning and design, and technological issues, repectively, this course is about the entire game production, starting with the concept design and market research, and proceeds all the way to the business issues.

GCT651 Media Interaction Design
This course is designed to study the interactivity of multi-modalities (visual, sound, olfactory, and tactile), and to experience creative interaction design. Emphasis is given to experience tangible interface design with the state-of-the-art of technology.

GCT652 Computational Design
This course will cover the introduction, research and state-of-art issues related to computational design. The student will get a comprehensive understanding of all the theories and approaches that have been investigated by related domain researchers such as cogtive psychologists, designers, aestheticians, computer sciencists, human-computer interaction researchers, etc.

GCT653 Virtual World
Virtual worlds and digital stories are the core elements of the entertainments contents. This course covers the basic theory on 'play' and its virtual worlds. After analyzing number of real world plays and the games, the class will build basic space out of the given drama script, and finally will use 'unreal engine' to build MMO space.

GCT656 Digital Fashion
This course investigates systematically how digital technology influence the fashion : garment design, manufacturing, and retailing. Major topics are: (1) Digital technology as the fashion tool, (2) Digitalized garments, including

wearable computers, (3) Fashion in digital contents such as movies, animations and games, (4) Digital technology for our fashion

GCT661 Networked Media
This course introduce networking with multimedia contents. The multimedia includes video and audio in various forms. Applications of the multimedia networking are included including digital video transmission and its applications to conferencing and remote lectures. Hands-on experience is emphasized with possible term projects.

GCT662 Human-Robot Interaction
As the robot technology advances rapidly, robots become robust and intelligent ever before. In this course, we shall go beyond the traditional HCI, and shall investigate various technological as well as socio-humanities issues as robots become one of the integral ingredients of our civilization.

GCT672 Digital Storytelling
The digital technology is prevailing over the science and technology as well as the everyday life. While the digitalization of text (hypertext), video (computer graphics), music (digital music) is being accelerated, the deep structure of storytelling is necessary to investigated in the computational point of view. This course studies the computational approaches of storytelling and applies to the various digital media like internet, computer game, electronic book, computer animation, etc.

GCT673 Social Computing
This course will bring together disciplines from AI, Cognitive Science and other related areas such as Psychology, Philosophy and Arts working on Computational Creativity. This course should encourage cross-fertilization between the various approaches, including the study of cognitive and computational models for Creativity, and the application of current AI techniques to the development of Creative Systems.
This area is the latest in a growing list of events that have, since 1997, solidified and added rigour to the computational treatment of creative processes (symposia and workshops associated with AISB 00, ICCBR 01, AISB 01, ECAI 02, AISB 02, IJCAI 03, AISB 03, LREC 04, ECCBR 04).

GCT674 Knowledge-based System Design & Modeling
By analyzing the text contents, units of knowledge are discovered and linked to already-existing knowledge. Summarizing and Integrating of different texts are studied and utilized to acquire and arrange what the story is in the texts. Theory and Practices will be studied for the knowledge framework, its acquisition, management, and utilization.

GCT681 Media Marketing
We will unfold the Media Marketing in three steps: First the media specific marketing strategy is introduced followed by the promotion theory based on media sales process. The third step will be the sell side electronic commerce as well as brand development as a pragmatic manifestation of media marketing.

GCT682 Cultural Industry Policy
This course deals with cultural industry policy which is highly valued in developed country since the cultural industry has become the national brand and the main industry field. However cultural industry policy is a kind of combination between industry policy and cultural one, which is not compatible with each different one. In addition, international competition is deepening the contradiction between those two factors. The purpose of this course is to pose and to solve those issues and problems, and then to map and to position it with strategic tools and comparative methodologies which is to be provided with this course.

GCT683 e-Business Strategy
Ubiquity of Internet has facilitated numerous business models, which in turn treaten the existing market structure. This course deals with the various issues in this context; management strategy, creating new business models, exploiting digital infrastructure, etc.

GCT684 Regional Culture Industry Studies
The very notion of culture involves both global-ness and local-ness. This course explores how the region-specific culture can be exploited, and be materialized into cultural outcome. Various strategies will be studied with the field study.

GCT685   Venture Management in Culture Industry
The students will study various issues in creating and managing the venture companies in the cultural industry. The topics to be discussed are: case study, processes and simulation.

GCT686   Corporate Culture
Corporate culture refers to the common value system which exists inside an organization. Whereas corporate culture partly affects the performance, and sometimes the fate of the organization, it becomes more critical in the organization that deals with the cultural artifacts. In this course, we will study the above issues.

GCT687   Management Strategy for the Arts and Culture Organizations
The aim of this course is to learn the most efficient way to manage an art related organizaton utilizing the mecenat and governmental support policies where applicable. Students would also learn how to analyze the internal and external environments differently depending on the goal of the business and whether it is a profit or a nonprofit organization

GCT688   Global Cultural Marketing
This course begins with the traditional marketing agenda such as marketing theory, marketing models and promotion management, and proceeds to the issues that arises in global marketing. Focus will be given to the global marketing for cultural artifacts, especially cultural contents.

GCT702   Research Methodology for Culture Technology
This course aims for providing an overview of culture technology research methodologies by introducing and analyzing the recent trends of theories and topics in culture technology research. Students learn how to approach research topics systematically and how to find and conduct a new research project that contributes to the body of knowledge in culture technology research. This course provides a theoretical background and a framework of methodologies for Ph.D. research in culture technology.

GCT703   Topics in Culture Technology
This course is concerned with the emerging issues in the theoretical and practical aspects of culture technology. The course may be offered throughout the entire semester, or may proceed in a relatively short time span, covering the same amount of material. Typical topics include content technologies, cultural management, cultural policies, content design, techno-culture, and scientific communications.

GCT703   Topics in Culture Technology
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GCT711   Topics in Digital Socio-Humanities

GCT721   Topics in Computer Graphics
This course deals with the emerging issues in 3D interactive graphics and animation. The primary subjects are rendering, modeling, motion control and 3D interaction techniques.

GCT722   Topics in Virtual Reality

GCT724   Topics in Animation

GCT731   Topics in Music Technology
This course aims to carry out projects based on subjects that are related the music industry or recent music issues. The subject will be unrestricted including Musical Prototype Restoration, Music Therapy, Prenatal Training, Psychotherapy, Music & Virtual Reality, and so forth. Through this course, students will have an opportunity to produce an output that combines music-arts with science-technology, and through the process Culture Technology as a new discipline will meet one of its groundworks for future development.

GCT741   Topics in Human-Computer Interaction

GCT742   Topics in Infotainment Technology

GCT751   Topics in Moving Graphics Design

GCT752   Topics in Digital Contents

GCT753   Topics in Computational Design
This course will cover the introduction, research and state-of-art issues related to computational design. The student will get a comprehensive understanding of all the theories and approaches that have been investigated by related domain researchers such as cogtive psychologists, designers, aestheticians, computer sciencists, human-computer interaction researchers, etc.

GCT763   Making Things

GCT772   Topics in Digital Storytelling
This course concentrates one field of digital storytelling: game storytelling, digital movie storytelling, animation storytelling, development, pre-production, etc.

GCT781   Topics in Digital Economics and Policies

GCT782   Topics in Cultural Content Marketing

GCT783   Topics in Global Culture
What is globalization? Is it really new? And is it really global? Where did it come from and what are its effects? Globalization is without doubt transforming economically the world. National borders are increasingly becoming irrelevant before the flow of money and goods. But globalizationalso has a great impact on cultures across the globe, as products such as Coca-Cola and Ipod, and even ideas from human rights to ideals of beauty intrude everywhere. This course will focus on how the growing impact of globalization is transformingnot only the economies of the world, but also on how culture, and even the meaning of culture, is being fundamentally changed.

GCT784   Topics in Internet Industries
From this lecture, the development process and growth factors of domestic internet industries based on time will be introduced. The success factors of companies and services would be analyzed and discussed to understand distinctly. In addition, I 'd like to provide students with clear vision to develop his/her own business with recognizing characteristics and core technologies of each market segment and strategies of key companies. Finally, the status of web 2.0 businesses in the US will be touched and we'll discuss about the startups in this area as well as the approach of Korean portals to this new themes.

GCT787   Topics in Cultural Planning
This course considers how art museums reveal the social and cultural ideologies of those who build, pay for, work in, and visit them. We will study the ways in which art history is (and has been) constructed by museums acquisitions, exhibitions, and installation. We will also consider the ways in which art museums are changing by looking at the world-wide boom in museum architecture, and by examining the relationship between contemporary art museums. The analysis of some of major art museum examples will give the insight to the students on the relationship between the cultural contexts of viewer and object, the nature of language or aesthetic discourse.

GCT960   Master's Thesis
This is an independent research work supervised by the advisor(s), toward the Master's thesis.

GCT966   Seminar, Master's

GCT967   Individual Study, Master's

GCT980   Doctoral Dissertation
This is an independent research work supervised by the advisor(s), toward the Ph.D.'s dissertation.

GCT986   Seminar, Ph.D.'s