

Department of Design, Graduate School of Science and Engineering
Department of Design, Faculty of Engineering

Design Chiba University

千葉大学

工学部 総合工学科 デザインコース

大学院 融合理工学府 創成工学専攻 デザインコース



Product Design

製品デザイン

System Planning

システムプランニング

Design Management

デザインマネジメント

Materials Planning

材料計画

Design Morphology

意匠形態学

Communication Design

コミュニケーションデザイン

Human Informatics

人間情報科学

Design Psychology

デザイン心理学

Commercial Design

コマーシャルデザイン

Environmental Design

環境デザイン

Humanomics

人間生活工学

Design Culture

デザイン文化計画

Contextual Design

コンテクスチュアルデザイン

Next-Genration Design Integrating Technology and Culture

In order to respond to today's varied world, we layout programs which strengthen design introduction education. Generally, varied education should be given in order to train diversified human resources. Then we built up continuous educational programs which lead to various designs which each individual pursues, and to not only the undergraduate education, but also to master program, and further to Ph.D. program. We hope to play its role as the highest education and research institute in training sophisticated designers and design researchers in Japan.

1-33 Yayoi-cho Inage-ku, Chiba-shi, Chiba-ken,
263-8522, JAPAN

design-cu.jp

CURRICULUM

Department of Design, Faculty of Engineering

- + Select 2 subjects among 3 subjects
- ** Compulsory subjects for entering graduate school

Assignment to Research Unit

	1st Year		2nd Year		3rd Year		4th Year	
	Term 1 & 2	Term 4 & 5	Term 1 & 2	Term 4 & 5	Term 1 & 2	Term 4 & 5	Term 1 & 2	Term 4 & 5
Compulsory Subjects	Integrated Design Practice I → II	Integrated Design Practice II					Graduate Research	
	Practicum in Design Fundamentals I → II	Practicum in Design Fundamentals II					Collaborative Research & Design Projects	
	Theory of Design I → II	Theory of Design II						
		Design Science I A B → II A B	Design Science II A B					
Compulsory Elective Subjects			Product Design I → II	Product Design II → III	Product Design III → IV	Product Design IV		
			Transportation Design I → II	Transportation Design II → III	Transportation Design III → IV	Transportation Design IV		
			Communication Design I → II	Communication Design II → III	Communication Design III → IV	Communication Design IV		
			Environmental Design I → II	Environmental Design II → III	Environmental Design III → IV	Environmental Design IV		
			Engineering of Form and Shape → Human Interface Theory* → Design Material* → Culture Theory of Design*					
			Design Science Seminar** I → II	Design Science Seminar** II → III	Design Science Seminar** III → IV	Design Science Seminar** IV		
Specialized Courses Subjects				Computer Programming Practice I → II	Computer Programming Practice II		Seminar on Material Planning	
			Solid Design Forming	Plane Design Forming	Environmental Ergonomics		Experiments on Ergonomics	
				Future Prospect of Design	Design Mathematical Analysis			
					Psychology of Color and Shape	Psychology of Living Activity		
				Design Culture Plan Seminar				

Compulsory Subjects :
Fundamental Sciences

Fundamental Engineering Seminar I II ***
 Introduction to Engineering A B ***
 Calculus B 1 2 ***
 Recitation Course for Calculus B 1 2 ***
 Linear Algebra B 1 2 ***
 Recitation Course for Linear Algebra B 1 2 ***
 Recitation Course for Graphics ***
 Statistics B 1 2 ****

*** First Year
 **** Second Year

Department of Design, Graduate School of Science and Engineering

* Compulsory subjects

	Master Course		Doctoral Course		
	1st Year	2nd Year	1st Year	2nd Year	3rd Year
Common Course to the Division	Advanced Seminar ①*		Advanced Seminar Ⅰ*		
	Graduate Research ①*		Graduate Research Ⅰ*		
Specialized Courses Lecture	Human-Living Environment System		Topics in Environment Ergonomics		
	Physiological Anthropology ①		Material Science in Artifact and Kansei		
	Theory of Materials Planning		Theory of Materials Planning		
	History of Design Culture		Human Life Design		
	Design Culture		Design History of Artifacts		
	Design Planning		Theory of Communication Design		
	Design Management ①		Behavioral Environment Design		
	Transportation Design ①		Design Management ②		
	Theory of Living Environmental Design		Industrial Design		
	Analysis of Media Design		Human Informatics		
	Topics in Human Interface		Ecodesign Ⅰ		
	Ecodesign ①		Physiological Anthropology ②		
	Theory of Care Design ①		Theory of Care Design Ⅰ		
	Service Design				
	Design Engineering				
Service Design Studio Work					
Specialized Courses Intensive Work	Design Cross-Fertilization Program		Design Cross-Fertilization Program		
	Design Alliance Program ③ ④		Design Alliance Program ⑤ ⑥		
	Design Project PBL - ① Ⅰ Ⅲ Ⅳ		Design Project PBL - Ⅴ Ⅵ Ⅶ Ⅲ		
	Design Internship Program - ① Ⅰ		Design Internship Program - Ⅲ Ⅳ		
	Global Design Studio Work - ⑤ ⑥ ⑦ ⑧		Global Business Planning Leader ②		
	Global Design Project - ⑤ ⑥ ⑦ ⑧		Global Technology Development Leader ③ ④		
	Global Business Planning Leader ①		Global Operation Leader ③ ④		
	Global Technology Development Leader ① ②		Global Sales Leader ②		
	Global Operation Leader ① ②				
	Global Sales Leader ①				

PRODUCT DESIGN



The unit proposes specific solutions for issues through design R&D for products, particularly for transportation and moving machinery, to help enhance lifestyles. We deem products as modes of life related to users and the environment. We position moving machinery comprehensively, including automobile, ships, aircraft, and other transportation modes, and such moving machinery as robots and industrial equipment. We draw on our knowledge and research based on this positioning to propose specific design concepts and formative works.

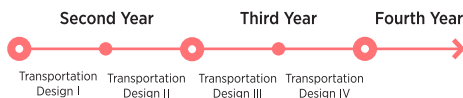


Kouichi HAYASHI
Professor
B.Eng., M.Eng., D.Eng.,
Chiba University

Transportation Design
Design Identity

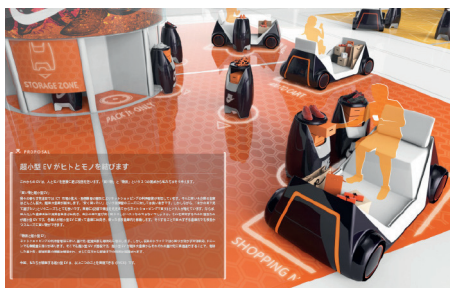
Program

From the second year, we offer transportation classes as a special subject. We invite lecturers from private enterprises and provide composite and comprehensive learning about transportation, from creating concepts to styling and packaging. Through these classes, we aim to cultivate the ability to execute work and gain insights.



● Transportation Design I

- Learn basic techniques about basic observation, sketching, and rendering
- Develop formative ideas
- Simple modeling in oil clay and foam
- Outline of design processes
- 1/10 modeling with industrial clay
- Presentations
- Display/revisions of assignment work
- *Sponsor : Daihatsu Motor Co., Ltd.*



● Transportation Design II

- Learn design processes, mainly for such automobile features as packaging
- Practice basic structure, functions, and packaging
- Master sketching techniques and acquire more advanced rendering techniques
- Review structural issues based on 3D drawings
- 1/10 modeling with industrial clay
- Presentations



- Display/revisions of assignment work
- *Sponsor : Mazda Motor Corporation*

● Transportation Design III

- Learn design techniques backed with consistent concept and business schemes
- Automotive sketches, understanding of straight lines and flux and curved lines
- Idea sketches and concept development
- Reviewing responsiveness to society and business potential
- Rendering and producing simple contour drawings
- Considering presentation methods
- Display/revisions of assignment work
- *Sponsor : Toyota Motor Corporation (Tokyo Design Research & Laboratory)*



● Transportation Design IV

- Acquiring techniques to differentiate designs and maintain traditions for the luxury sedan theme
- Collect data on European luxury cars and do mapping by manufacturers to understand structures
- Develop concepts, contexts, and ideas
- Reviewing responsiveness to society and business potential
- Rendering and producing simple contour drawings
- Considering presentation methods
- 1/5 modeling with industrial clay
- Display/revisions of assignment work
- *Sponsor : Toyota Motor Corporation*

SYSTEM PLANNING

We propose mechanisms for understanding various problems at their core, not only treating them symptomatically but solving them on a substantial level, as well as research the processes, environments, and mechanisms that give rise to such new mechanisms.

Moreover, we are not satisfied with basic problem solving, but make proposals and research about the future we want from a systems perspective, with regard to a variety of aspects, such as products, information, the environment, relations, society, and processes.



● Research cases

Proposing a new service system for the Tokyo Marathon

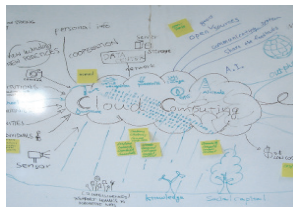
TOKYO BIG MARATHON X UB WALL

YusukeOGURA ShuheiYOSHIKAWA RyuMuhi

Unlike with many other sports, spectators at marathons can only watch what is in front of them, which is a fraction of the entire event and course. They cannot understand overall developments. To change that situation, our research proposed a new service system that provides an entirely new marathon experience for spectators, runners, and event organizers by setting up digital signage at various locations in recent years.



Medicine of Chiba University, Chiba University Hospital, Toshiba Medical Systems Corporation, and the Toshiba Design Center. The Unit focused on a survey finding that contents and information handling differ in hospital wards and among nurses. We therefore proposed an entirely new interface system that constantly improves itself without requiring external management. This is in keeping with the Design Management Research Unit's concept, empowering nurses to easily customize terminals themselves and share customized formats all other nurses.



● Proposing a portable information terminal for nurses

To introduce a portable information terminal for nurses at Chiba University Hospital, we surveyed, analyzed, and proposed a desirable product, interface, and the entire system through a joint effort with the School of



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Design Management / Design Systems /
Product Design



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Ayako NAGASE*
Associate Professor
B.Hort., Chiba University
M.Sc., University of Reading, U.K.
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Urban Greening



Algirdas PASKEVICIUS*
Lecturer
B.A., Vilnius Academy of Arts
M.Eng., D.Eng., Chiba University

Communication Design / Product Design /
Branding

* Concurrent role with College of Liberal Arts and Sciences

DESIGN MANAGEMENT



Design is understood to be a mechanism for value creation in society and business. Based on an understanding of megatrends, we propose and research promising product and service designs, design-based innovations, and business-model designs. On the basis of collaborations with various stakeholders, we are conducting the Co-Creation Project, research that aims to generate never-before-seen value. Moreover, we strive to train designers with international competency through global projects with businesses.



Shinji WATANABE
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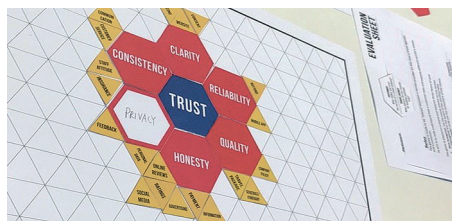
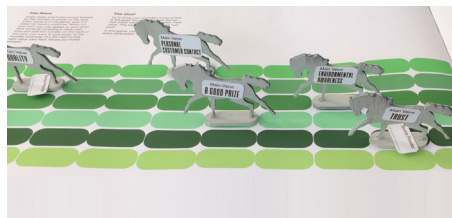
In-house Design Management
 Service and Product Design
 Innovation Design
 User Experience Design



● Research Cases

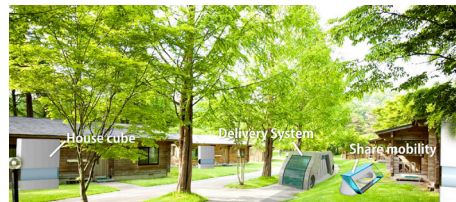
Proposing Process Visualization for Co-Creation Workshops

In collaboration with service design pioneer Prof. Birgit Mager (KISD) and the Toshiba Design Center, we have developed the Co-Creation Process, an effective tool for companies to use together with service providers and clients. In order to increase the value of the Co-Creation Process, what is important is not only workshops, but the total process encompassing the before and after of workshops. We have developed tools for visualizing services and values by way of investigation, proposal, prototyping, and inspection.



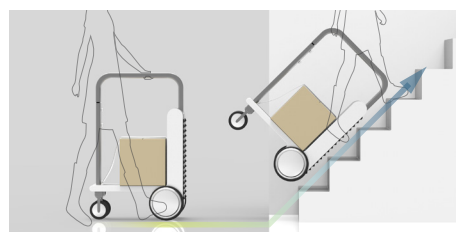
Realizing a New Society with Hydrogen

Hydrogen power is a sustainable energy characterized by “making, accumulating, using.” In collaboration with a Mexican university, we have conducted a megatrend survey to propose a new society (energy, transport, lifestyle, etc.) that can be realized with hydrogen power by 2040.



Proposing a New Home Delivery System

A low-rise zone without elevators reduces home delivery efficiency because of the many staircases and is a difficult location for female workers. By proposing a new trolley that can climb and descend stairs, we attempt to facilitate women’s access to the delivery industry and increase the efficiency of home delivery systems.



MATERIALS PLANNING



In design fields that focus on objects, people, and the environment, we do not immediately notice the materials underpinning objects. We can identify clues to resolve issues for the first time after reviewing the relationships between objects and people and between objects and the environment. In the Unit, we do not just explore the potential engineering properties of materials, but also consider

features in relation to human sensitivities and lifestyles derived from such inherent properties. Based on that, we comprehensively learn about the tangible and intangible aspects of materials and work on assessing these materials, proposing various uses and eco products, and experimenting with environmental impact assessments.



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Materials Planning
 KANSEI Engineering



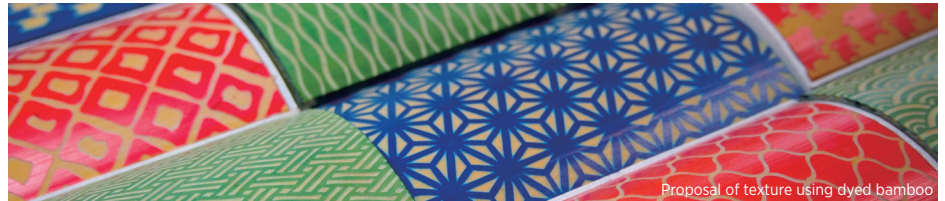
Edilson S. UEDA
 Associate Professor
 B.Eng., M.Eng., D.Eng., Chiba University

Sustainable Service Product Design
 Development Research in Design
 Ecology
 Universal Design (ED / UD)



Koichiro SATO
 Associate Professor
 B.Eng., M.Eng., D.Eng.,
 Keio University

Generative Design
 Emergent Design
 Design Theory and Methodology
 Design Science



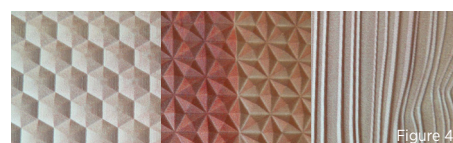
● Outline of education and research

The Materials Planning Research Unit nurtures an attitude of specifically understanding phenomena and observations by experiencing individual materials. Another goal of the Unit is to cultivate problem-solving skills when students encounter new problems. We broadly categorize our research focuses as :

- Building theories for various evaluation structures related to the sensory properties of materials
- Developing new materials and technologies and developing designs applying these materials and technologies
- Clarifying materials-transforming phenomena under various environments and understanding properties
- Engaging in formative expressions and experimental work harnessing material properties
- Transforming design materials and clarifying meanings
- Proposing environmentally benign design techniques and eco products

● Examples of student research themes

- Effect of impression on softness of product's appearance *Figure 2*
- Study on structure dyeing methods of bamboo
- Wood tiles created by a three-dimensional modeling machine *Figure 4*



- Proposal of satchel using weaving wood
- Egg-shaped plastic made by the mixture of polypropylene and various fillers *Figure 3*
- Proposal of texture using dyed bamboo
- Proposal of expression with acrylic resin in internally illuminated signboard device
- Water repellent operation by materials and surface processing
- Construction of structure model expressing the relationship between a product and affection
- Relationship between the appearance design of the kitchen appliances and the kitchen
- Proposal of products to improve the quality of life for patients with spinal cord injury
- Investigation design properties of environmental friendly toys based on user's perception
- Proposal of derivation of diverse solutions system



● Major current facilities and devices

- 1 Mixing/Kneading machine *made by Toyo Seiki*
- 2 Manual injection molding machine *made by Toyo Seiki*
- 3 3D printer *made by L-DEVO*
- 4 3D printer *made by Up box*
- 5 Universal tester *made by Shimadzu Corporation*
- 6 Desktop precision universal tester *made by Shimadzu Corporation*
- 7 Digital microscope *made by Keyence Corporation*
- 8 Digital microscope *made by Olympus Corporation*

DESIGN MORPHOLOGY



Mitsunori KUBO
 Professor
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 The University of Tokyo

Design Morphology
 Formative Dynamics
 Structural Dynamics
 Oscillating Dynamics



Takatoshi TAUCHI
 Associate Professor
 BFA,MFA, Tokyo National
 University of Fine Arts and Music

Design Morphology
 Sculpture
 Ecology Art
 Public Art

● Seeking the Significance of How People Create Morphologies

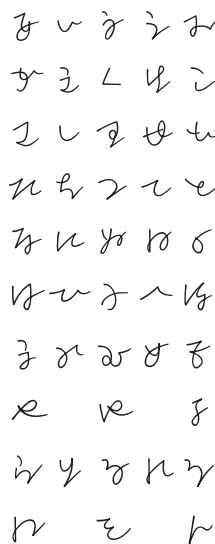
The Unit's research subjects cover all tangible and intangible man-made objects. We study the origins and features of building blocks from morphological stances. We aim to make proposals of specific objectives through a dual approach, i.e., an analytical approach that clarifies the comprehensive features of the object by analyzing its components and a more intuitive approach to evaluate entire specific objects directly. In the proposal process, we focus on deepening our observations by constantly confronting real objects by going outside the box while retaining complex, logical viewpoints. We explore why people create morphologies by looking into more specific design proposals and proposals for more experimental work dealing with shapes, materials, phenomena, and constituent elements.



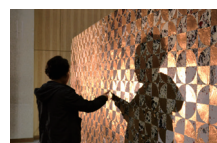
Graduation work: A folding stool that applied string scissors structures

● Goals of Design Morphology Research Unit

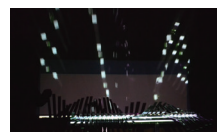
- While retaining traditional scientific reason, we value thinking that directly understands objects in their entirety in our research. We aim to materialize such ideas as object shapes.
- In all educational stages for bachelor, masters, and doctoral degrees we undertake research and training focused on production.



Form of hiragana in the future



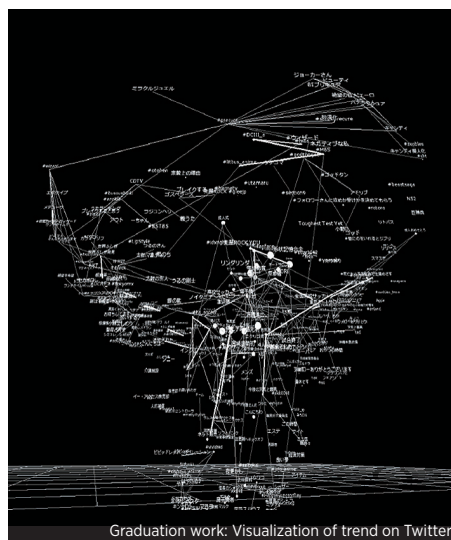
Graduation work :
 A spatial two-dimension art work



Graduation work :
 Producing an Installation
 which can play a motion of light



Origami cat and mouse



Graduation work: Visualization of trend on Twitter

COMMUNICATION DESIGN



What is Communication Design?

People everywhere have to communicate. The three major communication elements are the message sender and receiver and the message itself. "I have something I want to say. But how can I say it more effectively?" This is an eternal question that we have all experienced at least once. Communication Design endeavors to this question with visualized solutions. We improve message communication by presenting words and sender messages to receivers through visualization. In short, we design message-transmitting media. In design, a message sender is a designer, while the receiver is a user. Communication Design suggests designs that encompass everything concerning message delivery between designers and users. It is hard for users to convey the undefined product wishes to product creators. So, it is important for designers and other creators to identify such user demands. Designers should also uncover potential demands that users have yet to become aware of and present them in concrete ways. Communication Design research subjects cover such diverse areas as advertising, toys, fonts, packaging, public signage, interfaces, and service designs.



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Experimental Psychology
Design Psychology



Ikjoon CHANG
Assistant Professor
BFA, MFA, Seoul National University,
South Korea
D.Eng., Chiba University

Branding Design
Editorial Design
Information Design
Illustration

● Case study : Communication support research

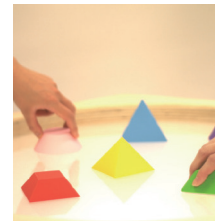
In this research, we support message senders by streamlining communications with publications to ensure that recipients correctly understand messages. For example, we have worked on the Azabu AAI (animal-assisted intervention) Educational Program of ERCAZ (the Educational Research Center for Anthrozoology) within the Veterinary Medicine faculty of Azabu University. We aim to improve communication between ERCAZ researchers and elementary school teachers using one of the programs. We draw on the usage manual for the education program as a publication medium in which we present the ERCAZ message.



The information we usually recognize is not an aggregation of bits and pieces but a Gestalt structure. In other words, understanding suffers if we don't see the whole of a structure. To illustrate, we have all had the experience of suddenly joining conversations between several friends without understanding what they're talking about overall even if working out individual remarks from those

friends. So, we need Gestalt perceptions for understanding.

Communication support research in the laboratory takes out and visualizes Gestalt information from message contents. The intent of the message sender is important for this removal process.



● What can we learn?

Undergraduate

We recommend that students to produce specific works for graduation research. In Communication Design, we focus on visualization to communicate messages effectively. The faculty therefore tends to deal with work focusing on this point.

Graduate School

The goal is to understand the broader totality and systems rather than individual phenomena. At the same time, you will become proficient at objectively conveying your viewpoints to others through experiments and surveys.

Main employers for recent students

Dentsu, Inc.	Hakuhodo, Inc.
Nihon L'Oreal K.K.	Studio Ghibli, Inc.
Toppan Printing Co., Ltd.	Rakuten, Inc.
Shimano, Inc.	Tomy Company, Ltd .

The Human Informatics Laboratory conducts scientific verifications and proposes designs for better relationships between people and information in the environment for people and information. That includes when exchanging information with others online and with computers.



Koichi IWANAGA

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Physiological Anthropology
Ergonomics

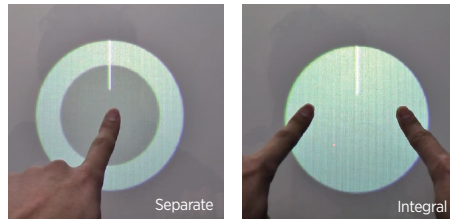


Keita ISHIBASHI

Associate Professor
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Kyushu Institute of Design

Ergonomics
Physiological Anthropology

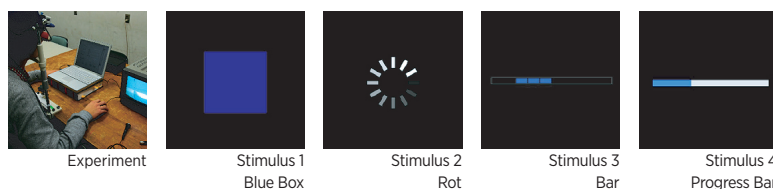
● How do people perceive changes in the length of time?



Study on uni-manual and bi-manual multi-touch interaction

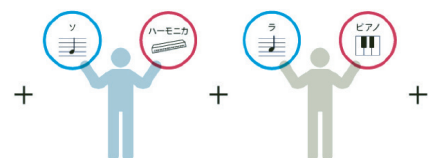
All of us have felt at some point the time flies quickly when having fun and passes slowly when we are bored. The Human Informatics Laboratory experimented to confirm how short or long times seem to people under certain conditions. We employed an interface display of waiting times that is commonly used in Web pages and application to explore the sense of time. For the experiment, we prepared four types of stimuli and checked how differently subjects felt each stimulus. We first showed subjects white square as a benchmark. After a certain period, subjects would see one of the stimuli. We would ask them to say how long or short the time felt compared with the benchmark. We repeated this process many times for each stimulus and different presentation times. We conducted 400 tasks per participant. On analyzing the collected data, we found that people felt time was shorter in response to unpredictable stimuli, such as rotations that would not hint at when they would end. People felt that time was longer when there were predictable stimuli, such as displays showing the percentage of remaining time. We might be able to use the results of this experiment to create signs that do not frustrate waiting people.

● User interface that changes according to the user



When you constantly have to make copies for the same members for school activities, you might find it annoying to have to input the same number every time you make such a copy. The user interfaces of machines for large, unspecified numbers of people are designed with average users in mind. It is impossible for these interfaces to be friendly for each individual. But what would happen if we created a copy machine whose interface changes according to the user? For our experiment, we prepared a default layout and one with frequently used buttons in one place. We started by having research subjects use the default layout to handle such tasks. We then separated the subjects into two groups. One used the improved layout, and the other used the unmodified one. We studied the differences that emerged between the two groups. After measuring lines of sight and working hours, we found that changing layouts according to usage patterns shortened work hours and made it easier for users to determine what buttons to touch next. We also found that modified user interfaces provided a sense of security.

● Proposing a new musical instrument system



Traditional musical instruments are fundamentally for individuals and are therefore not designed for group activities. If we played a musical instrument that created sounds from human interactions, would this alter the enjoyment of such an instrument in any way? We made a musical instrument that makes sounds when hands touch each other. The right hand plays a musical scale and the left hand is looks after different sounds. When hands touched, the musical instrument plays a certain sound and scale. Players enjoying the experience were most impressed with the notions of concentration, the sense of time, and the desire to experience the instrument again.

dpu

デザイン心理学研究室[®]



Design psychology is a relatively new academic field that approaches design issues through the perspective of psychology. Few laboratories around the world espouse design psychology. In Japan, we are the one and only such facility. In being fundamentally interested in people, we pursue better designs by adding observations from various aspects, from physiological, sensory, perceptive, and cognitive aspects to emotional processes. People both create and appreciate designs, so all issues of design are truly related to those of people. We can equally say that there is no design issue that has nothing to do with people. It is perfectly natural to deal with design issues from psychological viewpoints. It will become increasingly important to understand more diverse aspects of people. Moreover, the concept of “evidence” is recently regarded as essential even in the field of design. Such concept is so-called “evidence-based design” which is becoming extremely of importance in all the regions of design. Thus, we have promising prospects for design psychology as psychological research for design can provide very robust scientific evidence.



Haruo HIBINO

Professor

B.A., M.A., The University of Tokyo
Ph.D., York University, Canada

Design Psychology
Emotional Design
Color Science
Color Psychology
Psychophysics
Visual Stress

● Our venture activities with businesses

We are running a venture company “BB STONE Design Psychology Unit, Inc.” which was certified as an authorized venture company of Chiba University in 2011. We have completed and are currently conducting a lot of projects, most of which are with famous large companies listed with first section of

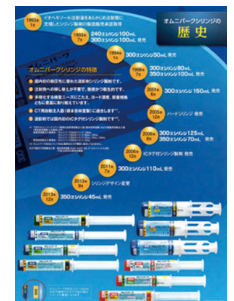
the Tokyo Stock Exchange. Shown below are examples of the completed projects in consultation with BB STONE Design Psychology Unit, Inc.



We consulted for the package design renewals of “Oreintricchi” and “Extravirgin olive” oils of Showa Sangyo Co., Ltd. This project was published as an article in NIKKEI DESIGN (May 2016).



“Science Plaza” of SHIMADZU CORPORATION. We cooperated on the illumination and soundscape designs.



We consulted for the package design renewal of OMNIPAQUE prefilled syringe series of Daiichi Sankyo Co., Ltd. This project was awarded a Pharmaceutical Packaging Design Award of JAPAN PACKAGING CONTEST 2014 in which the evidence-based design was highly evaluated.



We consulted for developing a remote controller under an entirely new concept “RakuAir” of Daikin Industries, Ltd. This was awarded GOOD DESIGN AWARD 2012 and IAUD (International Association for Universal Design) AWARD 2013.

You can have a closer look at many other examples (including those described here as well) at the URL below:

<http://www.bbstonedpu.com>

COMMERCIAL DESIGN



In today's society, goods pass through from the production, through distribution, and to consumption phases. Advertising adds context to goods, thereby offering experiences and values that consumers recognize as phenomena. Consumers do not seek mere goods; in other words, just commodities.



Cola - for can projection



Cola - for background

If all products guarantee the same features and price, they should all deliver the same results. But they are still largely subject to the purchasing decisions of consumers. They differentiate, select, purchase, and consume goods that they find most suited to their intended use based on the context that is linked to the goods. Consumption provides people with new experiences and fuels new aspirations for products. The results of consumption are fed back to the production phase as needs. Commodities science is a vehicle for studying products from two aspects: the social-scientific/commerce and the natural-scientific/technological perspectives across the production, distribution, and consumption phases.

Research topics of this Unit include products in the consumption phase, communication approaches, and context-building techniques based on commodities science principles. To put it simply, examples include commercial messages and advertising, packaging as a product explanation tool, and innovative store displays.



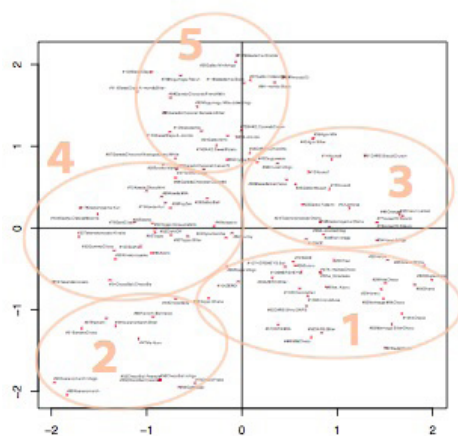
Yasuhiro OHARA

Assistant Professor
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Kyoto Institute of Technology

Graphic Design
Advertising Theory
The History and Theory of Design
Branding Strategy
Food Design



As well as leveraging such conventional channels as graphic design and other methods of expression, and marketing, we explore ways to position inherent product value from the commodity appraisal research perspectives of commodities science and to add context to products.



Challenges include the potential need to review how the production phase gives birth to offerings. We aim to include safety-related domains, notably for foods, healthcare, and disaster prevention, as new focuses for our design work.

ENVIRONMENTAL DESIGN



With the natural environment at its foundation, our living environment integrates human relationships and other intangibles and artificial objects and spaces.

The Environmental Design Laboratory comprehensively researches and reviews issues related to the environment and people from various perspectives based on an understanding of humanity's psychological and behavioral characteristics. At the same time, we study ideal environments and planning methods for practical design applications.

Our design domains encompass such diverse and wide areas while drawing on comprehensive perspectives.



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Display Design
 Sound Environment Design



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Environmental Design
 Play Environmental Design
 Furniture Design



Hiroko IMAIZUMI
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Environmental Design
 Public Service Design
 Environmental Graphic Design

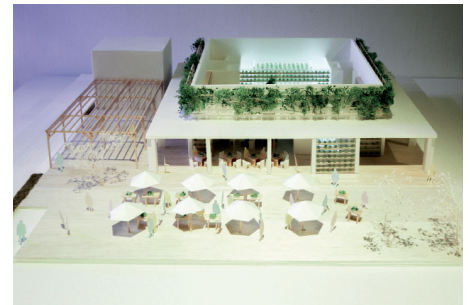


● Research Policy

The Environmental Design Laboratory comprehensively researches and reviews issues related to the environment and people from various perspectives based on an understanding of humanity's psychological and behavioral characteristics. At the same time, we study ideal environments and planning methods for practical design applications. With such features in mind, cross-sectional groups comprising undergraduate and masters and doctoral students collaborate in research themes in line with the following domains.

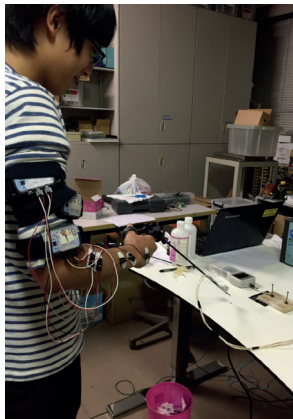
● Research and Design Proposals for

- Universal Design and space and furniture in medical and welfare facilities
- Environmental graphic planning
- Human behavior and psychology in commercial and public spaces
- Plant environmental design
- The psychological impacts of living space design
- Children's playing environments



HUMANOMICS

The Humanomics Unit designs products and environments from innovative perspectives that draw on various human measurement techniques. We engage in design activities that are pioneering both in Japan and internationally. We fulfill our mission through basic and applied research from the perspectives of ergonomics and physiological anthropology.



Design of endoscopic surgical forceps grip



Research for non-visual effect of LED lighting



Yoshihiro SHIMOMURA
Professor
B.Eng., M.Eng., D.Eng.,
Chiba University

Humanomics
Ergonomics
Medical design
Physiological Anthropology

● Laboratory status

Professor Yasuyuki Kikuchi established this Unit as an ergonomics laboratory in 1979, first in Japan. To date, the Unit has produced more than 530 graduate, masters, and doctoral theses. The Unit has dedicated chambers for artificial climate, lighting, aural, and other experiments, as well as having a general experimental chamber. We conduct various experiments every day. They include; central nervous system assessments through analysis of electroencephalogram, event-related potential, cerebral hemodynamics, and eye movements; autonomic nervous system assessment with continuous blood pressure monitor, portable respiratory monitor, and by assessing heart rate fluctuations, electrogastrograms, electrodermal activity, and perspiration; musculoskeletal system assessment with multipoint electromyogram, acceleration sensors, and 3D magnetic motion trackers; hormonal evaluations, such as for cortisol and melatonin; and sensory measurements, such as for vision, hearing, touch, taste, and odor. Almost no other design laboratory in Japan or overseas can handle such multidimensional human measurements and interpret that data.

● Research contents

Students often independently resolve to undertake project and joint research into their graduation studies.

In seminars, the students read a total of 100 international papers every year. That cultivates students' multifaceted insights regarding human nature, leading-edge research capabilities, and communication skills. When students' original thinking and motivation matches Unit's technologies, researches can and does bloom, earning awards from academic societies in Japan and overseas. Our research is broadly based on physiological anthropology, the bedrock of humanomics, which we draw on to classify research into the categories of "humans and the environment" and "humans and the produ-

cet." We conduct a lot of joint research with many departments in school of medicine and corporations in both categories. Our findings often find expression in society, underscoring the importance of humanomics in design.

● Examples of joint research with corporations

Takano (surgical assist suit) / Tokosha (design and evaluation of surgical scissors) / Paramount bed (lighting control design for the elderly) / Tokyo Gas (verifying the fatigue recover effects of bathing and the effects on sleep of taking mist saunas) / Shiseido (the impact of makeup as physical exercise) / Panasonic (the biological effects of parametric speakers, thermal and lighting environment) / Hitachi (design and design criteria for ultrasound diagnostic imaging equipment) / Morinaga (the effects of beverages on sleep) / Tachi-S (air-conditioning designs for automobile seats) / Yoshida Dental MFG. (design standards for dental equipment) / Itoki (verifying office chairs) / The Coca-Cola Tokyo Research and Development Center (PET bottle design) / Lion (usability evaluations for packages and toothbrush design criteria) / Hitachi Appliances (research on refrigerator shelving and lighting) / Bright Soleils (designing rehabilitation equipment for patients) / Isuzu Central Research Laboratory (estimating psychological work load on drivers through physiological indices) / Sharp (physiological effect of blue light) / LIXIL (verifying the effectiveness of bathing for lumbar stress) / Nestle (designing measuring tape for nutritional screening of the elderly)

● Message

The speed of technological advances is reaching saturation point to the extent that we ought to look at how technology should be used. We also should consider what products and environmental designs are truly good for people. Will technological advances cause the biological capabilities of people to decline? It is clear that manufacturing that eliminates the human factor has become effectively very difficult.

By scientifically evaluating our functions as organisms and social behavior and assessing data based on objective measurements, it is possible to create truly good design. Humanomics can pave the way toward today's and tomorrow's technologies and manufacturing.

DESIGN CULTURE



A prime goal of the Design Culture Unit is to design a living of tomorrow. Design extends beyond decisions on colors and shapes of things. It is increasingly required to be both the science and practical application of “creation of living.” A key barometer for a society’s affluence is the extent to which diverse cultures coexists. To materialize such a society, it is vital to closely evaluate the past and present aggregation of various ways of living particular to the region or people. The Unit collaborates closely with regional communities in Japan and overseas to rediscover and re-acknowledge promising local resources. Based on findings, we conduct education and research and propose designs for building a sustainable society that is compatible with regions, history, and nature.



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M.Sc., Ph.D., Chiba University

Design Culture
Community Design



Koichi MATSUO
Guest Professor
B.Lit., M.Lit., Ph.D.,
Kokugakuin University

Japanese Folk Religion
Japanese History and Tradition of
Performance Arts

● Design History

How have we built lifestyles?

To forge tomorrow’s design, we must understand a present living culture after properly recognizing the path toward it. We must leverage this insight to pursue designs linked with our living. The Unit pursues “what should be,” based on exploring the history of our living and industrial design in Japan and abroad.

● Regional Development Plans

How best can people shape their own living? What is true wealth? The Unit participates in various regional development projects in Japan and overseas. We ultimately aim for “Endogenous Regional Development” in which people can shape their own living. Designing and creating a living imbued with regional color fosters both mental and economic independence and autonomy for regions, leading to inner stirrings for “Another Development” that cannot materialize from outside.

● Materials Culture Research

What are the roles of material things in our living?

Material things mean more than their functionality. Depending on national and regional climates and environments, materials can more often have intrinsic significances. Cultures that make and use materials embrace various social values from which people

today can learn, examples being the creation of a sustainable society and new lifestyle motivations.

The Design Culture Unit proposes approaches to making things and conducting lifestyles by reconfirming and re-acknowledging the intrinsic value of materials.

● Learning a Way of Living in the Field



Design survey

Good design is impossible through desk work alone. It is essential for designers to immerse themselves in diverse regional culture. The Unit cultivates design surveys as vital to educational and research activities. We leverage knowledge and techniques from these surveys in proposals to make them useful for our designing and creating a living.

CONTEXTUAL DESIGN



Contextual design is about making designs and proposals relating to spatial formation as well as people's behavioral and experiential cultures, while deciphering the relationships between human activities and design in their social and historical contexts. As part of our research activities, we actively conduct vigorous fieldwork and social surveys, as well as deep literature studies on aspects of our lifestyle, such as residence, work, and leisure. As we gain more insights, we begin to see the future directions for creating new lifestyle possibilities and social values. In addition, we go beyond the conventional framework for understanding design, aiming our design activities at improving people's lives amid the kind of nature-culture symbiosis that is needed in tomorrow's world, which combines products, environment, visual media, services, and so forth.

- Regionality of design culture in global age
- Linguistic conception as design in Japan
- Design activities pursuing symbiosis between nature and culture
- Environmental design that invigorates communities

● Research themes to date

- Transforming human thought and behavior associated with equipment usage - considering user experiences with digital cameras
- Product and service design to increase daily physical activity of the elderly in country area
- Social design to promote student participation in citizen-oriented regional development
- The word meaning of ISHO appeared in descriptions of fine and applied art in early to middle of the Meiji era
- Chair designs for Japanese living spaces through evaluations of furniture design in the 1950s to 1960s
- Visualizing information flows wartime reporting and their impacts - expressing media literacy as infographics



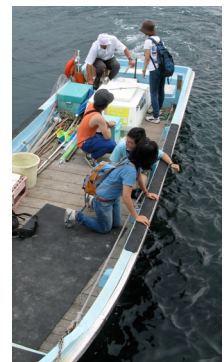
Takayuki HIGUCHI
Associate Professor
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Chiba University

Design Theory and History
Japanese Design Culture
Symbiotic Environment Design
Social and Service Design
Interior Design

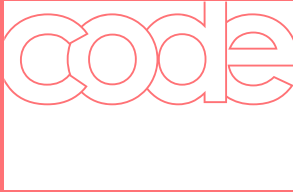


● Research and Design area

- Considering the roles of design in modernity
- enhancement and externalization of physical ability with technology
- semiotic meaning of products and services generated in consumer society



GLOBAL PROGRAM



CODE program

Continents Design Education Program (Since 2011)

Chiba University has launched a new design education program which aims to nurture global designers who could succeed anywhere in the world by collaborating three different types of design education of three continents, North America, Europe, and Asia.

The program aims to nurture a designer who will be in the leading position of Japan's future creative industry especially areas in service (computer system and software) and contents industries (game, animation, and products)

CODE program provides various types of programs thus the students are able to choose one that best suits them.

<http://design-cu.jp/code/>



POST
URBAN
LIVING
INNOVATION PROGRAM

PULI program

Post Urban Living Innovation
education and research program (Since 2015)

The Post Urban Living Innovation Education and Research Program uses technology to take on the challenges posed by the various issues facing human life. The project will focus on the situations in Japan and Central America to clarify the challenges faced by the world's urban areas, and will develop human resources in both countries who will contribute to living innovation in the future, and also develop human resources who will contribute to the living innovation industry in Japan.

One large problem shared by the world's urban lifestyles is related to urban overcrowding. Accepting a rapid influx of a population that grows as its nation's economy develops causes the provision of things like housing and transport infrastructure to fall behind, forcing many people to live in horrible conditions. These are issues that both developed nations and developing nations have in common. So this program will implement a next generation, practically-versed human resources development program (Post Program) jointly in Japan and Central America, to develop superior human resources with practical experiences who will contribute to the future.

<http://design-cu.xsrv.jp/puli/>



Campus
Asia
Plant
Environment innovation

CAPE program

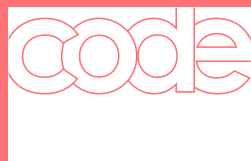
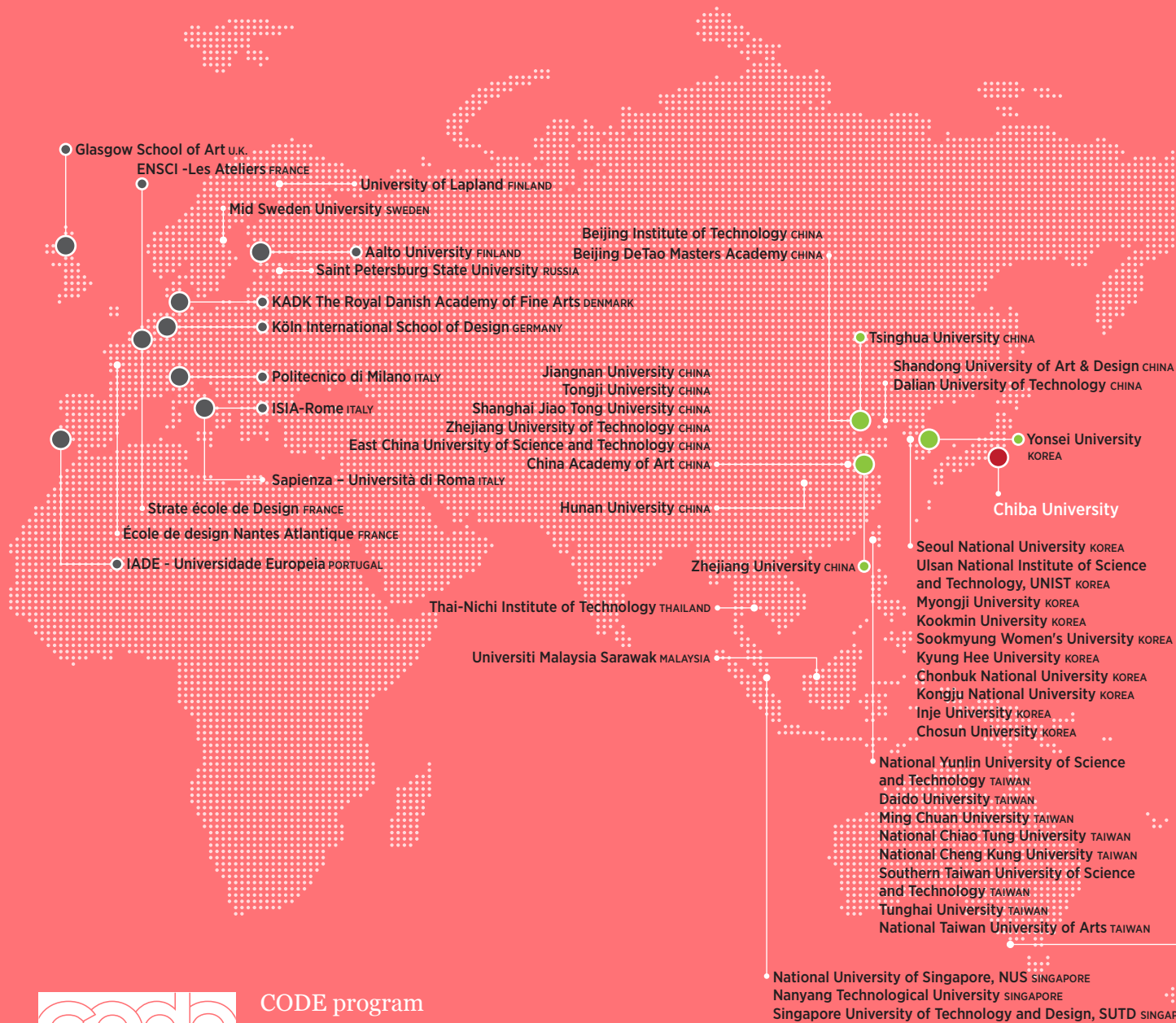
Campus Asia Plant Environment innovation program (Since 2016)

As part of Chiba University's efforts to create new interdisciplinary specialized fields, this project realizes practical applications of advanced technologies in plant environments under the partnership between the Japan's only Graduate School of Horticulture and the Graduate School of Engineering. By combining CAPE by the Graduate School of Horticulture and the Innovation Program by the Graduate School of Engineering, students have unique opportunities to study diverse domains (e.g., agriculture, IoT, robotics, AI, etc.) in science and engineering to the social sciences (e.g., food distribution economy, urban park policy, etc.).

<http://www.chiba-u.ac.jp/campusasia/en/>

GLOBAL PROGRAM

The Global Programs at Department of Design, Chiba University offers a lot of interdisciplinary programs such as Double Degree and Joint Degree, as well as short-term workshops.



CODE program

Continents Design Education Program (Since 2011)

● 11 Universities and Schools



PULI program

Post Urban Living Innovation education and research program (Since 2015)

● 6 Universities

POST
URBAN
LIVING
INNOVATION PROGRAM



cape

Campus
Asia
Plant
Environment innovation

CAPE program

Campus Asia Plant Environment innovation program (Since 2016)

● 3 Universities

● Sister Universities and Institutions - Design Major

