

School of Design & Science

*Work in the gaps
between disciplines.*

Spring 2027
Admission

June 1 – 30
2026

PRE-APPLICATIONS

ChibaTech
School of Design & Science



The worlds of Design and Science are inextricably linked. *Science is informed by Design, design is a science.* The interactions between the two are powerful, subtle, often unrecognized.

— JOURNAL OF DESIGN AND SCIENCE

About SDS

SDS is an antidisiplinary graduate school designed for the most consequential work of the next decade. It is the first English-only graduate program at Chiba Tech, the academic arm of the Henkaku Center, and a community committed to intervening at the level of paradigms rather than within them.

We are committed to antidisiplinary culture as a method for systemic impact.

Our Program

SDS offers both Master's and PhD programs built around project-based, antidisiplinary learning and research with real-world impact. Our curriculum spans a diverse range of fields — including artificial intelligence, law and governance, psychology, mindfulness and awareness, engineering, media studies, and design.

To teach students to integrate methods and insights from diverse disciplines, SDS experiments with class formats that incorporate co-teaching and project-based learning. Students are introduced to ongoing projects at the Henkaku Center where they can experience formulating research questions, designing experiments, and testing hypotheses in dynamic, collaborative environments.

“Rather than alternating between wearing four separate hats, we provide one pair of shoes for the journey.”

— FROM THE SDS CHARTER

Founding Principles

The twelve orientations and balancing dichotomies in this section draw from Joi Ito's foundational work on SDS principles.

These twelve orientations define the directional commitments of this Charter. They are not absolute rules but preferences along contested axes — indicating which direction to lean when trade-offs arise.

Resilience

STRENGTH

Systems

OBJECTS

Disobedience

COMPLIANCE

Pull

PUSH

Compasses

MAPS

Emergence

AUTHORITY

Risk

SAFETY

Practice

THEORY

Learning

EDUCATION

Sustainability

GROWTH

Public

INDIVIDUALS

Modular

MONOLITHIC

On the Principles

RESILIENCE over strength

Systems should bend with shock and recover, rather than resist until they break. We design for flexibility under pressure, not unyielding strength.

COMPASSES over maps

A map presumes the territory is known. A compass works in unfamiliar terrain. We equip students with directional instincts and values, not exhaustive procedures.

LEARNING over education

Education delivers prescribed content; learning is the active reconstruction of understanding in light of new evidence. SDS is structured around the latter.

SYSTEMS over objects

Objects exist within relationships, flows, and feedback loops. The leverage is rarely in the thing itself; it is in the structure that produces it.

EMERGENCE over authority

Expert authority concentrates judgment in one place. Distributed collaboration produces possibilities no individual would have arrived at — provided we design the conditions for it.

SUSTAINABILITY over growth

Growth-for-its-own-sake is a brittle goal. Sustainability — of cohorts, of programs, of the planet — is a more honest north star.

DISOBEDIENCE over compliance

Compliance preserves what is. The most consequential contributions to science, design, and society have come from people willing to break with received rules in service of something better.

RISK over safety

Optimizing for safety guarantees mediocrity. We choose calibrated, intelligent risk-taking; the alternative is irrelevance.

PUBLIC over individuals

The default optimization for individual return distorts what we build. We orient toward public goods, shared infrastructure, and outcomes that compound across people.

PULL over push

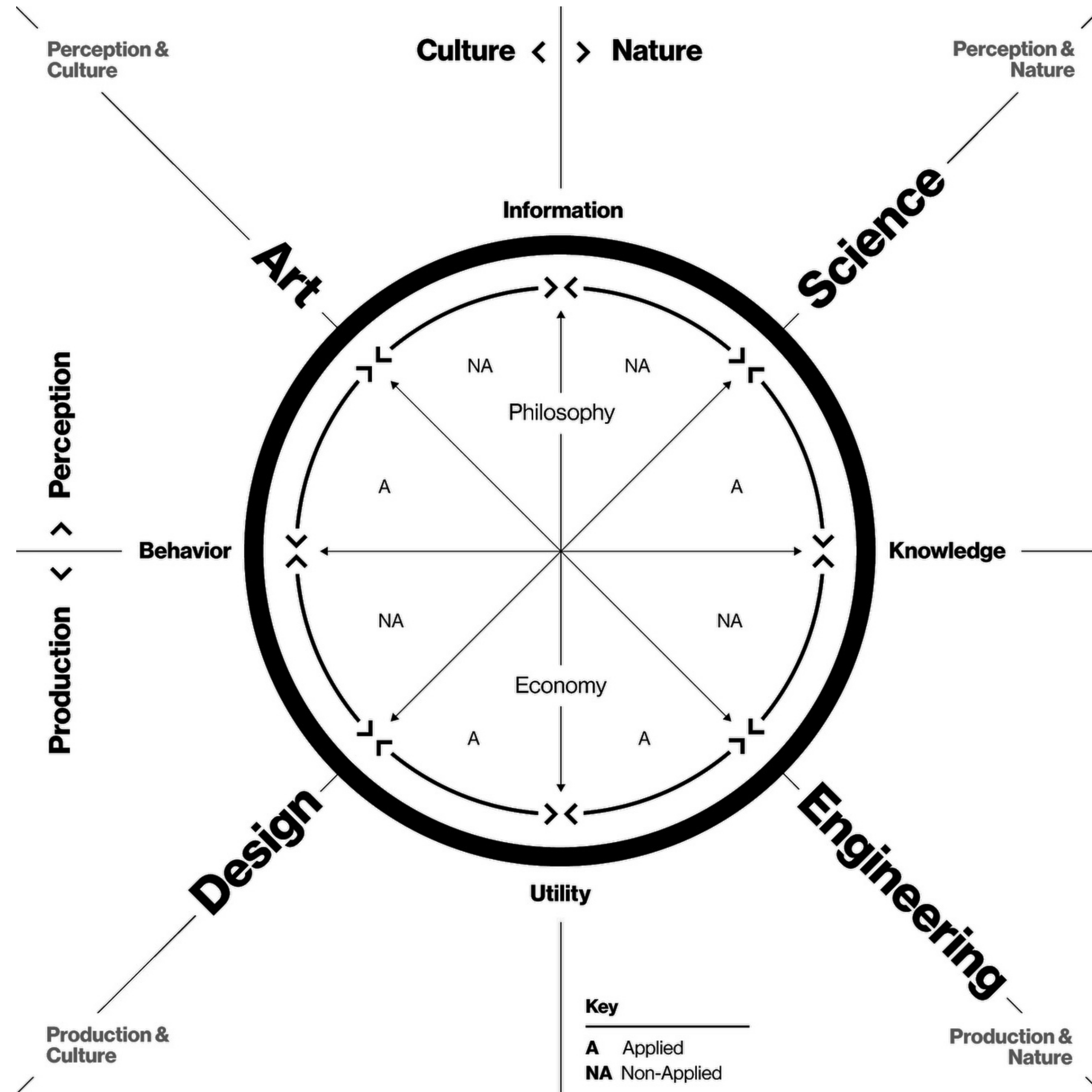
Rather than push predetermined plans into the world, we draw on resources and people as needs reveal themselves. Pull-based work fits an environment that changes faster than plans can.

PRACTICE over theory

Theory follows practice as often as it leads it. We learn by building, observing, and being corrected by the world, then refining what we believed.

MODULAR over monolithic

Monolithic structures are difficult to repair or recompose. Modular design — in code, in curricula, in institutions — survives change because its parts can be replaced without collapse.



Our Antidisciplinary Mandates

Neri Oxman's Krebs Cycle of Creativity arranges these four as positions on a single continuous loop, each turning the output of the previous into a new form. As the Krebs cycle in biology turns molecules into the energy a cell needs to live, this cycle turns one kind of knowledge into the next.

In Oxman's diagram, science and design sit opposite each other on the circle. Unlike the adjacent pairs, their relationship is mediated rather than direct. Building the lens that connects them — fusing design and science to advance both — is one of the things SDS exists to do.

Science

Explains and predicts the world; converts information into knowledge.

Engineering

Applies knowledge to develop solutions; converts knowledge into utility.

Design

Embodies solutions that maximize function and experience; converts utility into behavior.

Art

Questions behavior and creates awareness; converts behavior into new perceptions of information.

A Graduate Program Inside a Research Center

SDS is a graduate school; the Henkaku Center is its research home. The two were built together and operate as one community.

School of Design & Science (SDS)

ACADEMIC FOUNDATION

SDS operates as the academic arm of the Henkaku Center. It is a degree-granting institution, providing structured Master's and PhD programs that combine rigorous academic training with hands-on research experience. Students in SDS programs work directly with Henkaku Center faculty and participate in ongoing research projects.

sds.chibatech.dev

Henkaku Center

RESEARCH HUB

The Henkaku Center is the research laboratory. It conducts antidisciplinary research that bridges technology, design, governance, and society; attracts external funding through grants, industry partnerships, and philanthropy; hosts visiting researchers; and produces impact through prototypes, publications, frameworks, and experimental systems.

henkaku.center

Henkaku Center

“Research Hub”

About the Henkaku Center

As the world's challenges become increasingly complex and inter-connected, from climate change to public health to digital transformation, the limitations of traditional disciplinary boundaries have become more apparent.

The Henkaku Center was established to pursue “*antidisciplinary*” projects, which we define as projects that operate in the gaps between disciplines where conventional academic frameworks often fall short.

Our Center

Founded in 2021, the Henkaku Center at Chiba Tech is a platform for designing, prototyping, and building new forms of knowledge. Whether technical platforms or cultural outputs, we respond to fundamental shifts in our world and open new possibilities for understanding and action. We bring together researchers from all sectors of society to imagine, design, architect, and enact radical transformation, or Henkaku.

Understanding Henkaku

Henkaku (変革) is a Japanese concept that means “transformation” or “radical change.”

変 (hen) = change, transformation, unusual

革 (kaku) = revolution, reform

Together, Henkaku suggests fundamental transformation that changes the very nature or structure of something. A profound, systemic shift.

Our Philosophy

We celebrate transformation that unites power with aesthetics, like Sen no Rikyū's quiet revolution of the Japanese tea ceremony, or the architectural visionaries who reshape entire industries. For us, radical transformation is not chaos or destruction; it is redesign, refactoring, and renewal. It is the art of shifting systems from within, preserving their essence while elevating their form.

Current Projects

Students at SDS work alongside Henkaku Center researchers on active projects, with external collaborators that include MIT, the Royal Government of Bhutan, Sozo Ventures, and the Japan AI Safety Institute.

AI Education

Designing curricula on two pillars — teaching students to work with AI (workflows that sharpen thinking, sustained project management, security and verification) and teaching with AI as the medium through which they build genuine conceptual understanding. The throughline is a shift from problem-solving to problem-posing, and from assessing answers to assessing judgment.

APS is the first course built on this model — where AI collaboration is the expected medium of work, not a concession.

AI Safety Workshop

Building communities focused on responsible AI development, with the backing of the Japan AI Safety Institute (J-AISI). The work bridges international AI safety communities with Japan’s network through sustained engagement rather than one-off events.

Neurodiversity & Connected Learning

Designing education that honors each learner’s unique mind and fosters individual growth, developed in partnership with the Connected Learning Alliance.

Artificial Life

Exploring the essence of “life” by constructing living systems. Rather than prescribing outcomes through fixed objectives, the work uses minimal fitness criteria that generate diverse results through exploration — much as natural evolution generated tremendous diversity through the base requirement of survival.

Probabilistic Computing

A Henkaku Center–MIT collaboration advancing smarter, safer AI using probabilistic programming to help machines reason more like humans. The work embraces uncertainty as an essential feature of intelligence rather than something to engineer away.

**Dabtong House
(Bhutan–Chiba Tech Initiative)**

Joint projects with DHI and GovTech of Bhutan, including satellite-imagery research and voxel-based construction work with MIT and Chiba Tech material scientists. A scholarship program has so far brought six Bhutanese students to Chiba Tech.

Radical Transformation Award

A 10M-yen prize recognizing transformative individuals advancing human flourishing — designed to surface and celebrate the kind of leverage SDS exists to produce.

Sustainable Robotics Construction

Developing voxel-based, sustainable robotic construction methods in collaboration with MIT, with applications from Bhutan to Japan.

Tea Project

Cultivating humane technology and community through tea philosophy and the 青灯亭 tea house. A space where tradition meets innovation; the path to technological wisdom sometimes begins with a simple cup of tea.

AI Tokens & Committee

Through partnerships with Microsoft and Anthropic, the university has secured Claude credits to put real AI capacity in researchers' hands. Rather than regular grants, this program funds projects with AI tokens and subscriptions, allowing researchers to use AI at the scale serious research and prototyping demand. A committee of Chiba Tech faculty (with input from our partners) reviews proposals and allocates tokens and subscriptions to projects showing the most originality and promise.

Entrepreneurship — with Sozo Ventures

A course and ongoing initiative powered by Sozo Ventures that connects students with a global network of innovators, mentors, and startup founders, while addressing Japan's specific startup challenges through collaborative, project-based learning.

School of Design & Science

“Academic Arm”

Our Location

SDS sits on the Tsudanuma campus of Chiba Institute of Technology, about ninety minutes by train outside Tokyo.

The school is housed inside the Henkaku Center, where students learn and work alongside our researchers and faculty.

Students are expected to be in Japan during the academic year. For doctoral students and pre-arranged Master's students, a hybrid arrangement can be discussed by agreement of the faculty.



Anchored in Japan

SDS is an AI-forward experimental school. We place as much emphasis on the human capacities needed to navigate an uncertain era as on technical expertise. The Japanese cultural context offers distinctive resources for understanding the relationship between awareness, craft, and human development. Traditions such as tea ceremony, calligraphy, and martial arts embody ways of knowing that complement analytical and technical approaches.

No single Japanese concept is school doctrine, but a few come up often as useful reference points. The notion of *ma* (間), for example, reminds us that what is absent shapes what is present: in design, the space around an object; in institutions, the deliberate creation of openness rather than filling every gap with structure. *Wa* (和) describes harmony not as passive consensus, but as the active cultivation of coherence among diverse elements — conditions in which differences coexist

without requiring uniformity. And *wabi-sabi* (侘寂) — an appreciation for the weathered, asymmetrical, and incomplete — becomes increasingly relevant in a world where AI systems produce outputs that appear effortless and uniform.

These are reference points, not requirements. What they share, and what we do try to cultivate across the school, is a particular set of capacities: pure experience that emerges from practice and presence rather than abstraction alone; refined perception as a foundation for good judgment and skilled action; the recognition that cognition is embodied and that physical practice shapes mental capability; and the insight that how something is done matters as much as what is accomplished.

As technical work increasingly involves shaping AI behavior and communicating intent rather than writing explicit instructions, these capacities become not merely forms of cultural enrichment,

but practical requirements. The ability to perceive subtle patterns, sustain attention, and respond sensitively to context are emerging as essential skills for the AI era.

Anchored in Japan during this period of transformation, SDS sees awareness practices not as peripheral to technical education, but as integral to developing the forms of perception, judgment, and presence that the future increasingly demands.

Curriculum

SDS offers Master’s and PhD programs. The Master’s is structured around 30 credits over two years; the PhD adds three further years of advanced research. Both centre on the SDS Core (DNA+APS) and progress toward an independent research thesis.

DNA introduces SDS philosophy and anti-disciplinary practice; Principles of Awareness develops the metacognitive substrate the rest of the school depends on; APS I and II are the workshop where students learn to pose — not just solve — problems.

The required-vs-elective split is deliberately small: the required core ensures shared vocabulary across an otherwise plural cohort, and the electives let students follow their actual research interests rather than disciplinary expectations.

Masters			
Required		Elective	
Advanced Research in Master’s Program	6 CR	Complex System Science	2 CR
The Antidisciplinary Approach to the Modern World (DNA)	1 CR	Design & Prototyping	2 CR
Practical Antidisciplinary Problem Solving I (APS I)	6 CR	Digital Media & Flourishing	2 CR
Practical Antidisciplinary Problem Solving II (APS II)	6 CR	Human and Machine Learning	2 CR
Principles of Awareness (PoA)	2 CR	Intelligent Agent	2 CR
		Law and Governance	2 CR
		Modern Physics	2 CR
		Modular Practice Seminar	1 CR
		Technology and Values	2 CR

PhD			
Required		Elective	
Advanced Research in Doctoral Program I	3 CR	Advanced Complex System Science	2 CR
Advanced Research in Doctoral Program II	3 CR	Advanced Design and Prototyping	2 CR
Advanced Research in Doctoral Program III	3 CR	Advanced Human and Machine Learning	2 CR
Career Development Exercises	2 CR	Advanced Intelligent Agent	2 CR
Communication Practices	2 CR	Advanced Law and Governance	2 CR
Engineering Ethics	2 CR		

Course offerings at SDS / Henkaku Center

SDS Core (DNA / APS) Taught by all faculty members, these courses combine lectures, tutorials, and collaborative projects for an antidisciplinary learning experience.	Open to all Chiba Tech students (PoA, Human & Machine Learning) Cross-disciplinary courses designed to foster learning and collaboration between SDS and the broader Chiba Tech community.	Henkaku Center courses (Entrepreneurship, web3) Practice-focused courses that connect students with real-world experimentation, emerging technologies, and industry-relevant projects.
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COURSE EXAMPLE 1

The Antidisciplinary Project Studio

A worked example

In one project, students diagnose a broken reinforcement-learning agent in a 3-D environment — one that the AI can't fix in a pass or two. Students must observe the agent's behavior, identify where it deviates from theory, and communicate the diagnosis back. You gain concrete experience with where AI-assisted workflows break down, building the metacognitive awareness to recognize AI failures and generalize that skill to whatever you do next — all while learning theory necessary for an engineering degree.

Structure

APS meets twice a week across a thirteen-week semester: roughly an hour of lecture, an hour of tutorial, and an hour of studio time each session. The course progresses through four mini-projects — environmental sensing and Bayesian inference, decision-making under uncertainty, multi-agent systems, and digital fairness — before culminating in a self-directed final project.

Problem-solving » Problem-posing

The first half of the course transitions students from problem-solving (e.g., programming, debugging) to problem-posing (e.g., what is an objective, what should we measure, what is the right question to ask). The second half is structured around lectures, project updates, and group critique as students propose and build their own projects.

“AI is a good translator and a poor judge. It can tell me what code says; it cannot tell me whether the code does the conceptually correct thing.”

— FROM A FIRST-YEAR SDS STUDENT

How we evaluate AI-assisted learning

We view AI not as a shortcut at SDS but as a structured part of the pedagogy. Five evaluation mechanisms run in parallel through APS

Session-log review

instructors review students' full AI session logs, looking at how task delegation, prompts, and verification practices evolve over the semester.

Peer review

students evaluate one another's projects on interestingness, value, and uniqueness — the last specifically pushing against generic AI output.

Structured self-reflections

three written reflections track how a student's confidence in delegating to AI, and in verifying AI's output, changes across the term.

Periodic check-ins

developmental, not evaluative — week six and pre-final one-on-ones focused on AI-collaboration strategy.

AI interaction analytics

patterns across phases interpreted as evidence of developing specification skill, not as a proxy for "more use is better."

Voices from the studio

The quotes below are from synthesis documents and bug reports written by the first APS-I cohort — text the students wrote themselves about working with AI on real, deliberately broken systems. Reproduced anonymously, in the students' own words.

"The human's last role in AI collaboration is to design the objective itself. If you run AI against the wrong objective function, you can end up at 'efficiency was maximized, but my life got poorer.'"

"The greatest gain from this collaboration was that my perspective on how information flows through the real world was itself updated."

"I stopped treating AI as something that gives me answers and started treating it as a partner I work through my intent with."

"The danger isn't that the code looks suspicious; it's that it looks too clean to question."

"Using AI doesn't mean leaving it to AI. I learned that with my body, not just my head."



COURSE EXAMPLE 2

Principles of Awareness

Adapted from one of the most popular courses at the MIT Media Lab, Principles of Awareness is a required SDS course set in an experiential learning environment.

About

What is awareness? Is it a default state or is it cultivated? Can it improve performance and wellbeing? What role does technology play in promoting or hindering awareness? Is there an ethical framework for our capacity to be aware? And can self-awareness be linked to happiness?

The course is set in an experiential learning environment where students explore various theories and methodologies around these questions. Students are required to keep an open lab book documenting their observations, and to present them regularly during class sessions.

Format

Class meetings consist of practice, lectures, and discussions with invited speakers. Some talks will be open to the public. The practice ranges from meditation to hacking.

Final project

Students evaluate and develop awareness tools, techniques, and interfaces targeted toward performance and wellbeing.

Assignments

- Seven hours of sleep per day
- Daily contemplative practice
- Journal — shared on PubPub online
- One new thing per day

Degree Milestones

Timelines, requirements, and milestones for the Master’s and Doctoral programs. Both programs follow an annual rhythm of course planning, goal-setting, advising-committee reviews, and a culminating thesis or dissertation review.

Master’s Program — 2 years · 30 credits		
21 REQUIRED CREDITS · 9 ELECTIVE CREDITS		
PERIOD	ACTIVITIES	MILESTONES
Year 1 — Semester 1	Course planning; begin research discussions with advisor; annual goal and expectation setting.	Course enrollment · Expectations agreement · Report advising committee composition
Year 1 — Semester 2	Annual reflection on performance and goals; research thesis planning.	Review and reflection of Year 1 · First committee meeting
Year 2 — Semester 1	Course planning; goal-setting; propose thesis.	Expectations agreement · Start thesis review process
Year 2 — Semester 2	Complete required courses; complete and defend Master’s thesis.	Completion of coursework · Complete thesis review

A fast-track option is available for Master’s students who earn 4 impact points (peer-reviewed publications, public exhibitions with external review, accepted patents, successful funding rounds for SDS-related startups, etc.).

The standard curriculum must still be completed, but a thesis is no longer required.

Doctoral Program — 3 years · 17 credits

15 REQUIRED CREDITS · 2 ELECTIVE CREDITS

PERIOD	ACTIVITIES	MILESTONES
Year 1 — Semester 1	Course planning; goal-setting; begin research discussions with advisor.	Course enrollment · Expectations agreement · Report initial advising committee composition
Year 1 — Semester 2	Form committee mid-year; annual reflection; first achievement submission.	Review and reflection of Year 1 · First mentoring committee meeting
Year 2 — Semester 1	Course planning; goal and expectation setting.	Required core course 2
Year 2 — Semester 2	Prepare dissertation proposal; second achievement submission.	Second mentoring committee meeting · First achievement points · Pass dissertation proposal
Year 3 — Semester 1	Pass dissertation proposal; third achievement submission.	Mandatory coursework completed (suggested) · Finalize review committee · Start dissertation preliminary review
Year 3 — Semester 2	Complete and defend dissertation.	Finish achievement points · Submit written dissertation · Pass dissertation defense · Receive PhD

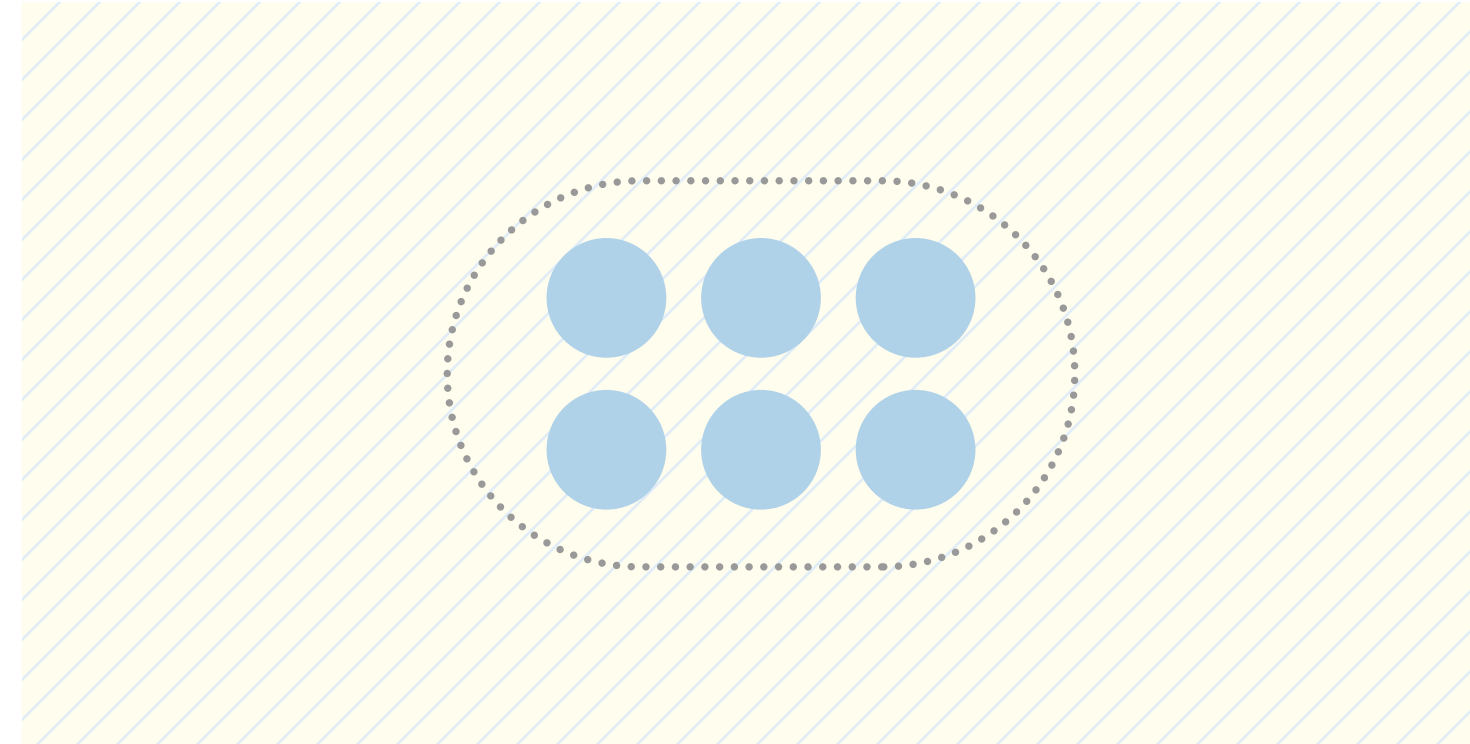
Traditional PhD students earn 4 impact points to graduate. A fast-track option requires 8 impact points with at least one A-level product.

By the dissertation review, the committee must have at least five examiners; one or two external to SDS (and possibly Chiba Tech) is strongly encouraged.

The First Cohort

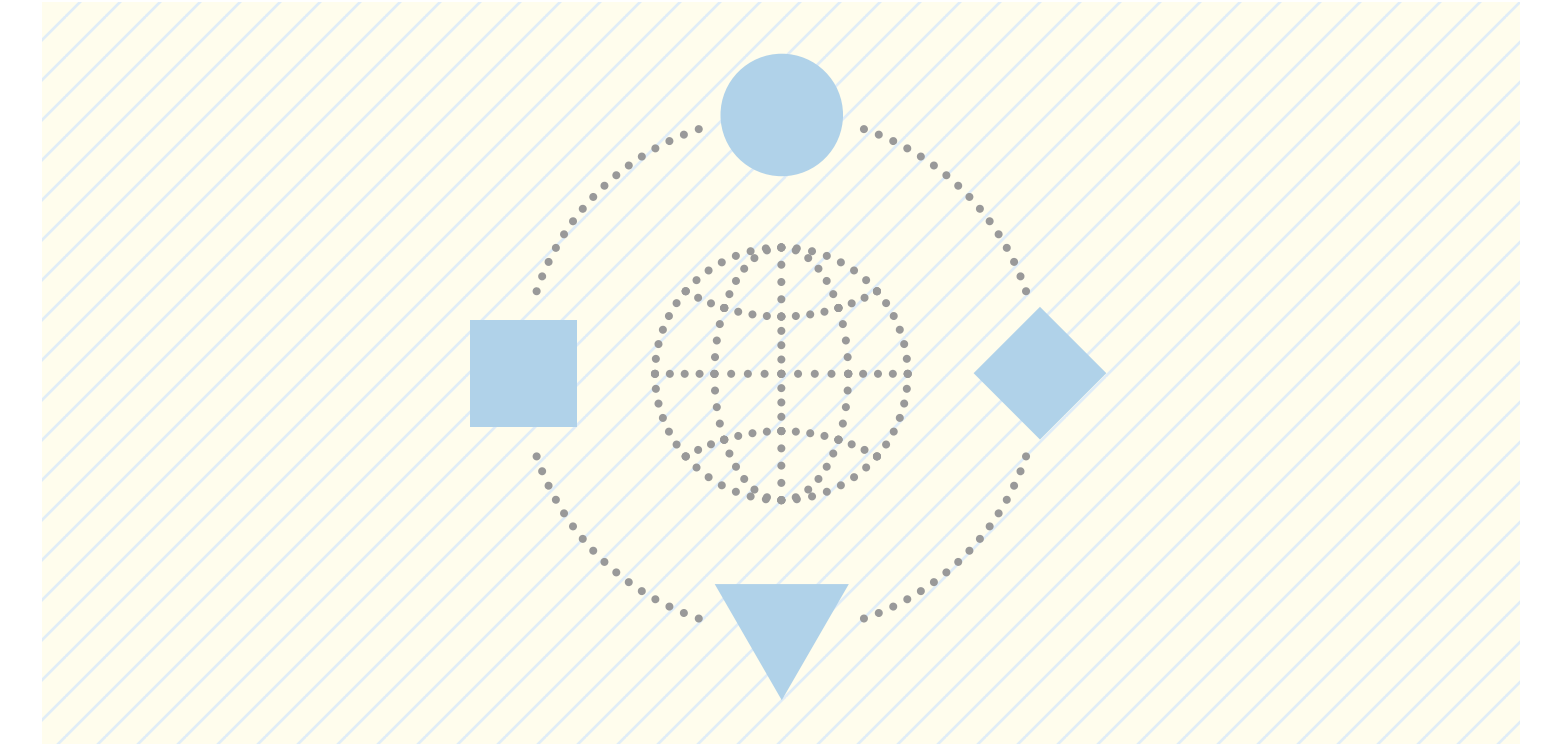
We are excited to welcome our inaugural cohort of curious and creative students from diverse backgrounds — including engineering, art, business, computer science, policy, and design.

This pioneering group embodies the antidisciplinary spirit of SDS, bringing together varied perspectives to tackle complex global challenges.



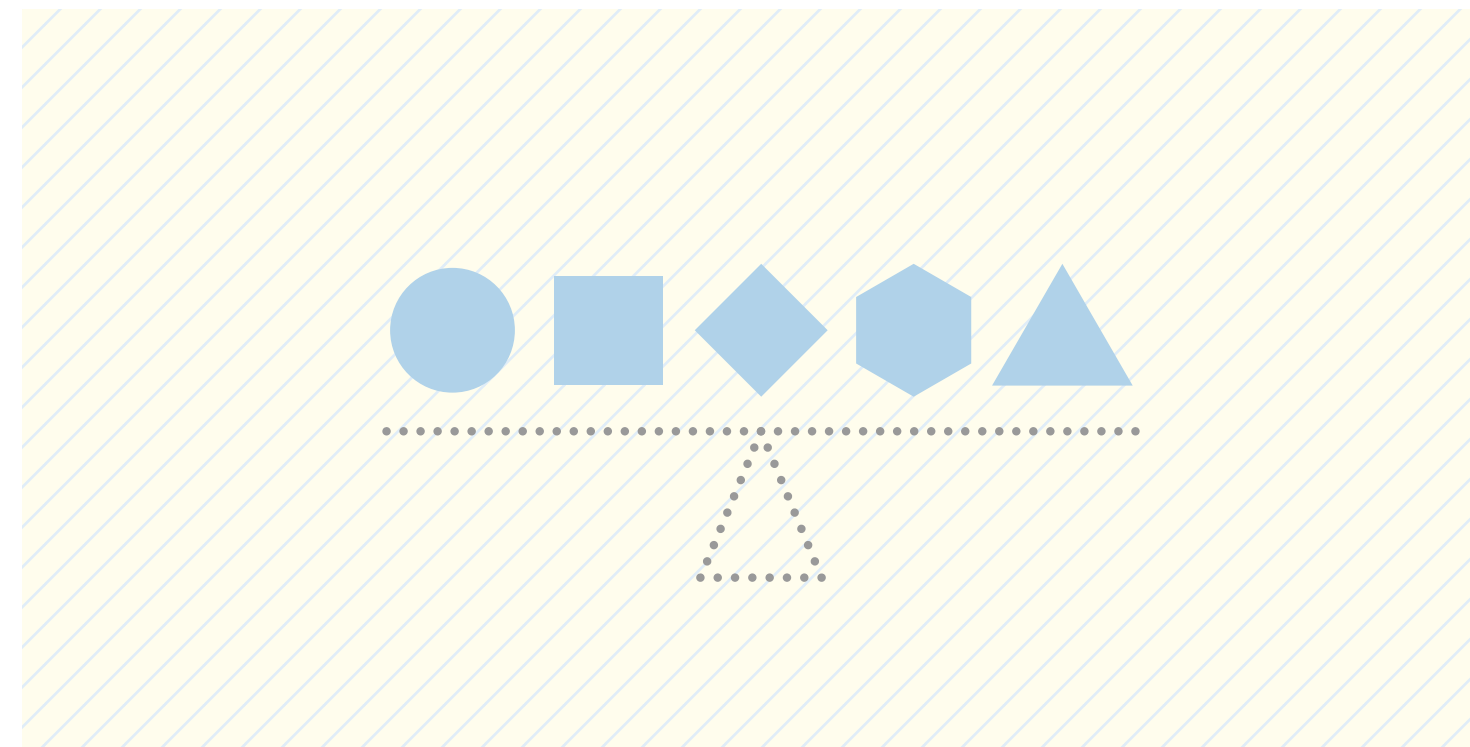
First Cohort

6 distinguished applicants from a highly competitive pool



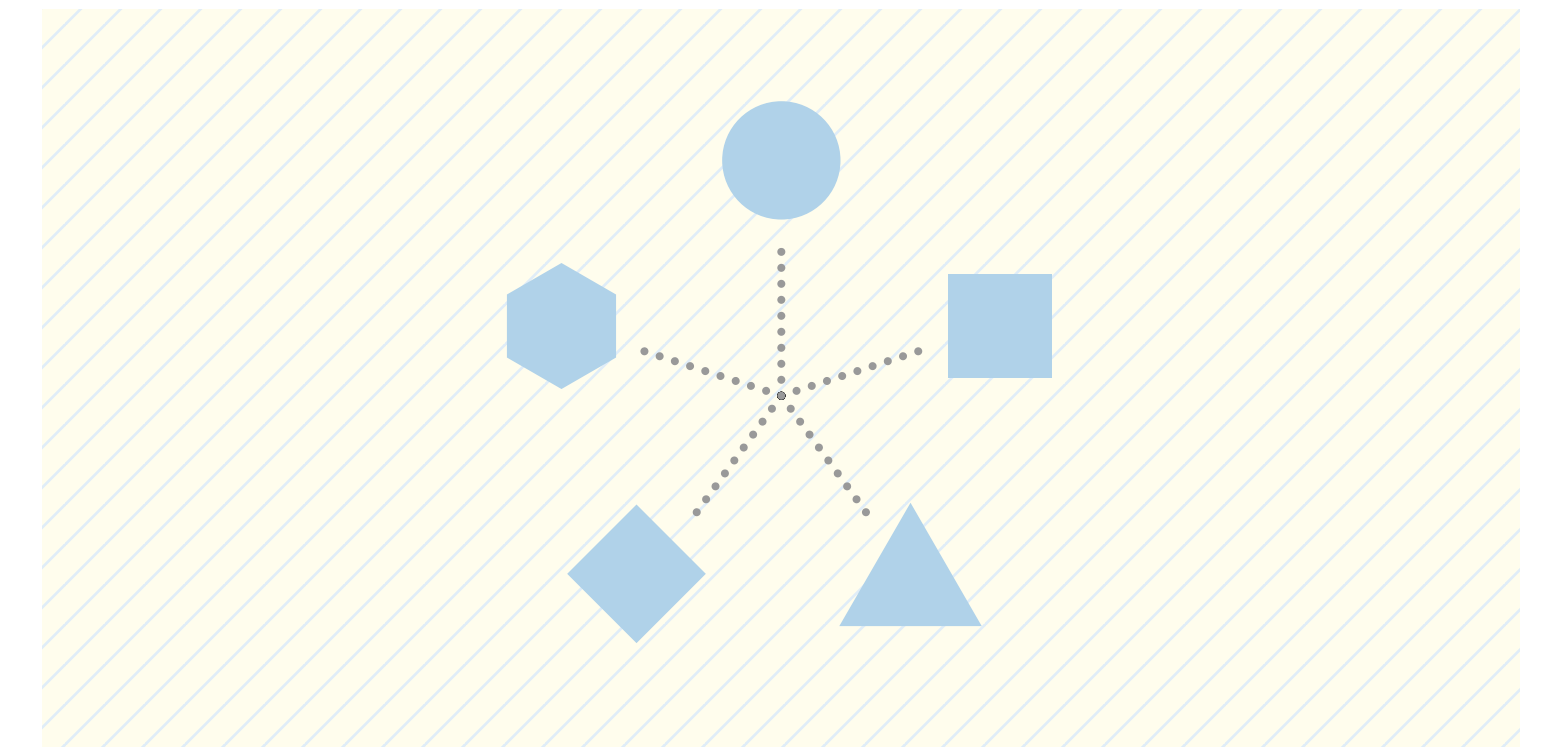
International Community

Students from Japan, the United States, Bhutan, and India



Equal Gender Balance

Reflecting our commitment to diversity



Diverse Backgrounds

Spanning engineering, art, computer science, sustainability, and design

Why SDS?

If you are reading this, you may be a graduating undergraduate student. You may already be deep into professional practice. You may not hold a degree at all, and may have encountered SDS through our extended research and creative network rather than through conventional academic channels.

What matters to us is less the formal path you took than the seriousness of your work, your capacity for independent thought, and your willingness to move beyond the limits of a single discipline.

The question is whether spending two years here would meaningfully change the trajectory of your work. We believe it can, for several reasons.

A peer cohort, not a student cohort

SDS maintains a deliberately small class size, with no more than a 1:3 faculty-to-student ratio. Your peers are not people learning fundamentals for the first time; they are people choosing to step beyond the boundaries of their existing disciplines in order to do more ambitious work. The atmosphere is closer to a research studio or experimental lab than a conventional classroom.

Faculty as collaborators, not teachers

Faculty at SDS hold appointments in both the school and the Henkaku Center. They are actively engaged in projects spanning Bhutan's GMC, probabilistic computing, AI safety with J-AISI, artificial life as a generative paradigm, and emerging approaches to technology policy.

SDS gives you structured access not only to this work, but to the process of developing it — on terms closer to collaboration and co-investigation than traditional instruction.

Publishable, launchable, exhibitable outputs

Major projects at SDS culminate in public artifacts: research papers, prototype demos, artworks, platforms, institutions, legal frameworks. We expect outputs that travel — to peer-reviewed venues, to galleries, to government partners, to industry collaborators — not artifacts that exist only inside the school.

Permission, and structure, to leave your discipline's frame

Antidisciplinary work is hard to do alone. The cost of leaving a discipline's frame is high — you lose its peer network, its language, its evaluation criteria. SDS exists to make that crossing tractable: a community that already speaks across domains, faculty who have done it themselves, and a curriculum built around the metacognitive skills it requires.

Multiple horizons, deliberately

We expect outputs across the full temporal spectrum, from Sputniko!'s speculative art imagining society generations away to near-term entrepreneurial ventures. We encourage all SDS members to experiment across this spectrum — to work simultaneously on near-term interventions and long-horizon provocations, rather than choosing one timescale and defending it.

Other ways to engage

If a degree program is not the right fit for your current trajectory, there are other paths into the community: as an affiliated researcher at the Henkaku Center, as a project collaborator on specific initiatives, or as a visiting practitioner. Reach out via sds-admissions@chibatech.dev and we can talk through what might make sense.

Applying to SDS

Who should apply?

SDS welcomes applicants from any background — engineering, design, philosophy, economics, art, computer science, or something else entirely. You don't need to fit neatly into a box. What matters is a desire to work across disciplines, an eagerness to collaborate, and a commitment to building systems that make a real difference.

If you're excited by questions without easy answers, interested in designing your own path, and ready to learn through real-world projects with faculty and peers, SDS might be the right place for you.

The degree

Master's students who complete our program are awarded a Master of Engineering degree by Chiba Institute of Technology. While the degree is formally situated within the field of engineering, the program itself is deeply antidisciplinary. We typically consider students for a PhD track after they finish the Master's

Timeline

PRE-APPLICATIONS FOR SPRING 2027

June 1 – 30, 2026

SDS has a two-stage admissions process: a pre-application reviewed by SDS faculty, followed by the official Chiba Tech application for candidates who advance.

Tuition

MASTERS

- Year 1: ¥1,134,500
- Year 2: ¥922,500

PhD

- Year 1: ¥1,134,500
- Year 2: ¥922,500
- Year 3: ¥952,500

Tuition figures are quoted in Japanese yen and reflect current Chiba Institute of Technology rates for the Master's program. Doctoral and visa-related fees are confirmed with admitted students during the official Chiba Tech application stage.

The Process

- 1 ONLINE SUBMISSION**
Applicants submit through the [SDS website](#).
- 2 FACULTY REVIEW**
Each pre-application is reviewed by three SDS faculty members.
- 3 VIRTUAL INTERVIEW**
Applicants passing the first round are interviewed by three faculty members.
- 4 CHIBA TECH APPLICATION**
Applicants passing the interview apply through the official Chiba Tech website.
- 5 CHIBA TECH INTERVIEW & RESEARCH-PLAN DEVELOPMENT**
Applicants develop their research plan further in interview with faculty.
- 6 RESULT ANNOUNCEMENT**
Final results are posted on the Chiba Tech website.

Documents required

- Personal statement / narrative
- Portfolio
- Research plan
- Academic transcript

Ways to engage beyond the degree

If you'd like to engage with SDS or the Henkaku Center outside of a degree program — as a researcher, project collaborator, or visiting practitioner — please write to us at the same address. We are actively expanding the community of people working alongside SDS.

Questions

EMAIL sds-admissions@chibatech.dev

WEBSITE sds.chibatech.dev

*We'd love for you
to be part of it*

SDS is a school we are building together — with our students, our faculty, and the broader community of people committed to taking paradigms seriously.
We'd love for you to be part of it.

TEAM SDS & HENKAKU