TRAILBLAZING A BETTER WORLD BY DESIGN.

ARCHITECTURE AND SUSTAINABLE DESIGN

ASD.SUTD.EDU.SG

FOR ENQUIRIES:
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SUTDSINGAPORE
REDESIGNING ARCHITECTURE – THE SUTD WAY

Architecture is traditionally about the physical form and space of buildings. With digitalisation, architecture will be redefined by new technologies, new structures and new materiality curated by advanced intelligence to create human-centric space.

- The use of artificial intelligence and deep machine learning must be ethically and structurally embedded in the design of architecture to enable the rapid development of wide-ranging options and solutions. By relegating the mundane to machines, architects can devote their energy to better architectural resolution.

- The future of built environment is likely to shift its focus to extreme circularity and human-centricity. The former deals with the ever-urgent challenge of climate change but with greater emphasis on the right blend of green innovations and change of paradigms. The latter deals with the challenges of an ageing population and need for greater care.

- ASD seeks to address the most challenging social, environmental, and economic sustainability challenges that exist in all cities. ASD aims to be a thought leader in a more balanced approach to sustainable design. The future architects are not just designers but strong advocates and leaders of the built space.

The Architecture and Sustainable Design's (ASD) innovative curriculum is designed to focus on this changing reality and is characterised by:

- Hands-on approach
- Holistic understanding of the way technology is changing our design and building processes
- Inclusive approach to the cultural and historical aspects of designing buildings and cities

OUR ASD GRADUATES WILL BE ARCHITECTS WHO CURATE URBAN SPACES OF DIVERSE SCALES. ARMED WITH STRONG DIGITAL COMPETENCES, ASD GRADUATES WILL BE THE MEDIATOR OF THE PHYSICAL AND DIGITAL WORLD OF ARCHITECTURE. IN THIS MOST UNIQUE SPACE, THEY WILL ALSO BE IN THE PRIME POSITION OF INFLUENCING FUTURE COMMUNITIES.

Graduate with a Bachelor of Science in Architecture and Sustainable Design

A FORWARD-LOOKING CURRICULUM

Over the course of the first three common Freshmore terms, you will have built a solid foundation in Science, Mathematics and Technology (SMT), Humanities, Arts and Social Sciences (HASS) and Design. You will also be introduced to architecture tools and concepts, beginning a “virtual studio” right from the start with the advantage of an interdisciplinary perspective, which will prepare you for your ASD major.

In the ASD programme, you will be equipped with cutting-edge digital tools, applying computational thinking, design, computational architecture, AI and more to architecture in order to solve increasingly complex design challenges. In addition to your ASD subjects, the exposure to engineering disciplines and the courses you will continue to take in HASS lead to a unique technological imagination and prepare you to be a new kind of architect who embraces the cultural and social context of technology in the modern world.

Every undergraduate will have worked on at least 20 design projects throughout their years of study at SUTD. In Terms 6, 7 and 8, you will be able to choose from a number of Option Studios and Capstone Studios. They represent cumulating projects for the Bachelor of Science in ASD programs, offering you the opportunity to work on real-world problems individually and in interdisciplinary teams with students from other majors. Upon graduation, you’ll possess an extensive portfolio of industry-inspired projects, well-prepared for your career journey.

ASD CORE SUBJECTS

The Design Studio sequence is at the heart of the program and distinct to architectural education. Subjects fall into four areas of focus:

- Building Technology
- Design Computation
- History, Theory & Culture
- Studio

LEARNING OUTCOMES OF ASD CORE

- Think critically
- Design through enquiry, reflection and invention
- Directly experience construction
- Understand the technical demands of building

- Think digitally and physically through drawing, making, writing and speaking
- Be socially, sustainably and ethically responsible

Master of Architecture Thesis Award (Representation & Computation) by Ashley Chen

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ASD CURRICULUM

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<th>JAN-APR</th>
<th>MAY-AUG</th>
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<tr>
<td>Freshmore Subject</td>
<td>Y1</td>
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<tr>
<td>Core Subject</td>
<td>Y2</td>
<td>Modelling &amp; Analysis</td>
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<td>Elective</td>
<td>Y3</td>
<td>Physical World</td>
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<td>Capstone</td>
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<td>Computational Thinking for Design</td>
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<tr>
<td>Elective</td>
<td>M.Arch</td>
<td>Social Science: Understanding Behaviour, Culture &amp; Society (HASS)</td>
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TERM 2

- Modelling Space & Systems
- Technological World
- Science for a Sustainable World
- Design Thinking & Innovation

TERM 3

- Modelling Uncertainty
- Global Humanities: Literature, Philosophy, and Ethics (HASS)
- Any Two Electives*

TERM 4

- Architecture Core Studio 1
- Architectural Structure & Enclosure Design
- Digital Design & Fabrication
- Traditions (History, Theory & Culture)

TERM 5

- Architecture Core Studio 2
- Architecture Science & Technology
- Building Information Modelling
- Modernisms (History, Theory & Culture)

TERM 6

- Architecture Core Studio 3
- Architectural Energy Systems
- Creative Machine Learning
- Architectural Theory & Design

TERM 7

- Sustainable Design Option Studio 1
- Capstone
- Elective
- Elective

TERM 8

- Sustainable Design Option Studio 2
- Capstone
- Elective
- Elective

TERM 10

- THESIS
- Professional Practice 2
- Elective

ELECTIVES

Several electives are offered to address emerging challenges such as critical resource constraints, the need for energy-efficient and livable housing, rapid urbanisation, transportation planning, historical conservation and land use transformations.

BACHELOR OF SCIENCE

Upon completing eight terms, you will graduate with a Bachelor of Science (Architecture and Sustainable Design). Our distinctive programme structure, combined with a hands-on approach to architecture, equips you with a powerful blend of technical expertise and creative innovation to confront the future challenges of both society and architecture. You will be poised to design integrated, effective evidence-informed solutions, harnessing the power of data-driven design and advanced fabrication techniques.

With sustainability woven right from the start of your education, you will be delivering designs for the future extending beyond economic considerations to encompass the social and cultural dimensions through the use of technology, design computation methodologies and sustainable design principles.

GRADUATE SCHOOL

ASD’s rigorous technical training prepares you for various post-graduate programmes. Other than the SUTD Master of Architecture programme, our ASD graduates are also enrolled at top universities such as:

- École Polytechnique Fédérale de Lausanne
- Harvard Graduate School of Design
- Massachusetts Institute of Technology
- Yale University

+++ Chia Sheng Wei Computational and Architectural Designer, Type0 Architecture Class of 2020, ASD Master of Architecture Alumnus

ASD was truly an eye-opening and exciting programme for me. With the guidance of a diverse and technically versatile faculty, and an environment where one is not afraid to fail, students are given the opportunity to develop a keen sense of design that incorporates various fields of knowledge, especially in the use of the latest technologies.

**ASD is a course for the brave, and risk-takers**, and through the various studios and electives over the trimesters, students quickly learn to develop ideas that challenge the norm, in a clear, logical manner. As long as one is eager to learn, and with the right attitude, there really is no limit to what is possible with regards to pursuing one’s interests in the field, particularly in the Master of Architecture programme. I have high hopes that my peers and I have the potential to continue to push boundaries even after graduation.

*Term 3 Electives:*

- Science and Technology for Healthcare
- Data Driven World
- Designing Energy Systems
- Spatial Design World

- In addition to all subjects in Term 1 being grade-free (Pass/No Record), students can choose up to four more subjects from Terms 2 and 3 to be grade-free.
- Students will declare their choice of major in Term 3.

Information is subject to change. Visit asd.sutd.edu.sg for latest updates.
SUTD’s integrated learning pedagogy is highly relevant to the practice of architecture which demands a holistic, highly collaborative and outcome-driven approach; and the ASD curriculum that drives impact through technological innovation, plays a critical role in bridging skills gap in the built environment sector.

DP’s partnership with SUTD began in 2010 and has continued to strengthen over the years. The ASD graduates who join DP stand apart because of their solid grounding in a sustainability and technology-focused design education. Their versatility to adapt to new ideas and the changing landscape is noteworthy. The high quality of ASD graduates entering the profession is the result of the programme’s continued focus in pushing design innovation in sustainable architecture and nurturing future tech-enabled leadership.

The Master of Architecture consists of a structured internship and two additional terms comprising an advanced design and research studio, an elective, thesis preparation and thesis.

ASD is accredited for the Master of Architecture as a professional degree programme by the Singapore Board of Architects. The goal is to equip ASD graduates and qualified students from other architecture schools with the best level of technical competency and scientific knowledge while being attuned to the social and cultural dimensions through the use of technology, upon completing eight terms, you will graduate with a Bachelor of Science in Architectural Energy Science for a Theory & Culture.

The Master of Architecture programme, our ASD, encompasses the social and cultural dimensions through the use of technology, integrated, effective evidence-informed solutions, harnessing the power of design computation methodologies and sustainable design principles. Upon completing eight terms, you will graduate with a Bachelor of Science in Architectural Energy Science for a Theory & Culture.

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I have seen an incredible range of projects from the ASD graduates and qualified students from other architecture schools with the best level of technical competency and scientific knowledge while being attuned to the social and cultural dimensions through the use of technology, upon completing eight terms, you will graduate with a Bachelor of Science in Architectural Energy Science for a Theory & Culture.
GLOBAL EXPOSURE

In January each year, students are free to pursue their personal interests. During this Independent Activity Period (IAP), some ASD students choose to use their skills to contribute to the world or to gain more exposure through overseas workshops. In Terms 6 and 8, certain Option Studios provide you with international opportunities to broaden your horizons.

SWISS IAP: SWISS INNOVATIONS
- Studied Swiss innovations in Basel's distinctive spaces.
- Explored potential sites for a hospitality space through the use of data.

JAPAN STUDIO: INUJIMA LIFE BOTANIC GARDEN
- Collaborated with Sejima and Nishizawa Architecture Atelier (SANAA) and Japanese architect Kazumi Kudo.
- Conducted research on Pritzker Laureate Kazuyo Sejima’s “Inujima Life Botanic Garden”, a project that focused on new ways of living in the small island community of Inujima.

JAPAN IAP: MEASURING THE UNMEASURABLE
- Examined and analysed different types of data to better understand the utility of spaces in the Kansai region.
- Explored various sites including an observatory building, restored machiya guesthouses and art house projects on Inujima guided by the architect herself, Kazuyo Sejima.

VENICE STUDIO: ANDREA PALLADIO
- Learned about the great Renaissance architect Andrea Palladio (1508-1580) and experienced his architecture in Venice.
- Studied the relevance of Palladian architecture in our modern context, and how to apply the values of scale, proportion and hierarchy to meet the needs and challenges of architecture.

VIETNAM IAP: COMMUNITY DESIGN AT HANOI
- Building on an earlier community design project in Ho Chi Minh City (2014-2015), SUTD OLab embarked on a new community design project in Hanoi, in partnership with World Vision and CapitaLand.
- Designed a safe learning and playing compound for a new kindergarten in Le Xa, encouraging local children to go to pre-school and receive proper nutrition and education.
- Conducted research and a co-design workshop with teachers and residents.
- CapitaLand constructed the final design in May 2018.

STUDENTS’ EXCELLENCE ON THE GLOBAL STAGE: AWARD-WINNING WORKS

Jacques Rougerie
Foundation International Architecture Competition 2019, Coup de Coeur Award
A Living Organism: Design for the End of the World by Nabila Larasati Pranoto, Master of Architecture, Class of 2019

ARCASIA Thesis Of the Year 2021, Gold Award
The Makers Museum by Chia Sheng Wei, Master of Architecture, Class of 2021

Fentress Global Challenge 2021, Third Place
Aviation 2050: Imagining Future Adaptive Antifragile Airport Terminals by Tan Gee Yang, Master of Architecture, Class of 2021
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- The use of artificial intelligence and deep machine learning must be ethically considered. The future of built environment is likely to shift its focus to extreme mundane to machines, architects can devote their energy to better development of wide-ranging options and solutions. By relegating the and structurally embedded in the design of architecture to enable the rapid order to solve increasingly complex design computation, parametric tools, applying computational thinking, equipped with cutting-edge digital sciences (HASS) and Design. You will also be introduced to architecture sciences (SMT), Humanities, Arts and Social Science, Mathematics and Technology (HASS) lead to a unique technological blend of green innovations and change of paradigms. The latter deals with the ever-urgent challenge of climate change but with greater emphasis on the right circularity and human-centricity.

- Architecture – Redesigning of the built space. The future architects are not just designers but strong advocates and leaders in inclusive approach to sustainable design. The ever-urgent challenge of climate change but with greater emphasis on the right circularity and human-centricity. The latter deals with the ever-urgent architectural resolution.

- The Design Studio sequence is at the heart of the programme and distinct with the advantage of an “virtual studio” right from the start. You will have built a solid foundation in the cultural and historical aspects of designing buildings and cities through enquiry, and speaking and writing. You'll possess an extensive portfolio of industry-inspired projects, giving you the opportunity to work on real-world problems individually and in interdisciplinary teams with students from other majors. Upon graduation, you will be well-prepared for your career journey.

ASD Core Subjects

- Directly experience construction and building processes
- Think critically
- Think digitally and physically
- Be socially, sustainably and ethically responsible
- Understand the technical
- Design through enquiry, history, theory, and culture
- Studio
- Design Computation
- Building Technology
- Science, Mathematics and Technology (SUTD)
- Humanities, Arts and Social Science, Mathematics and Technology (HASS)
- Looking A Forward- to architectural education. Subjects fall into four areas of focus:

ASD Core Subjects

- Design Computation
- Building Technology
- Science, Mathematics and Technology (SUTD)
- Humanities, Arts and Social Science, Mathematics and Technology (HASS)