The programme is a post-professional, multi-disciplinary learning platform that seeks motivated individuals, committed to the cause of sustainability and passionate about the challenges posed by climate change and urbanisation in Asia. It will equip architects, engineers, educators, planners, policy makers – plus others involved in the making of the built environment – with insights, knowledge and skill sets for a holistic approach to sustainability with which they can assume a role of leadership in their respective discipline and organisation. It offers them an opportunity to acquire the mindset of integrative thinking which, in the quest for sustainable solutions, is 'the convergence of planning, design, technology and policy towards strategic outcomes'.

The National University of Singapore is consistently ranked as one of the top universities in Asia. Modules of this programme are taught by highly qualified staff from the Departments of Architecture and Building at the School of Design and Environment. They bring to the curriculum cross-disciplinary viewpoints, in-depth practical experience and cutting edge research. Teaching is augmented with Master Classes by renowned experts and practitioners. A series of supporting guest lectures is scheduled each semester, offering insights into the Singapore experience and emerging viewpoints from innovative thinkers at the National University of Singapore. The School of Design and Environment is home to the Centre for Sustainable Asian Cities, a leading research hub in the Asia-Pacific, which, along with other research initiatives within the School and the University at large, offers students many informal learning opportunities.

Key Emphases of the Programme:

Forging an Integrative, Multidisciplinary Approach

Focus on the Asian Context

Lessons from the Singapore Experience

Exploring Scalability of Solutions; Buildings to Cities

CURRICULUM

Why 'Integrated'? Why Asia?

Buildings contribute up to 40% of CO_2 emissions worldwide, use 40% of the world's energy requirements, 16% of available water, 40% of raw materials, and generate waste amounting to 30% of landfills. The problem of consumption leading to waste can be traced to decisions made at the drawing board. The building process is fragmented; experts and professionals work in isolation, short-term spending overrides long-term costs, project goals do not balance all stakeholder needs and perspectives. The failure to break down barriers of time and know-how during design becomes a failure of performance of the built environment in operation.

Asia is expected to account for 50% of additional world-wide energy demands over the next 15 years and 50% of the world's new buildings. It already contributes significantly to rising global emissions, and to the parallel, often ignored, costs such as vanishing biodiversity, shrinking agricultural land, loss of vernacular knowledge, and the unfolding spectre of climate change. Of the many changes which have swept Asia during the last half-century, none have been so profound and far reaching as population increases in urban areas. This demographic shift, from rural to urban, poses challenges to how new cities are designed, how existing ones grow, what they displace and how rural economies can be sustained.

Asia needs new mindsets; project teams, educators and policy makers must actively rethink how they frame the challenges of a sustainable future, how to integrate overlapping inputs from stakeholders, how to forge collaborations between building and city, design and technology, marketplace and policy.

Key Emphases of the Programme

Forging an *Integrative, Multidisciplinary Approach*
The compartmentalisation of the design process into disciplinary silos limits the performance of buildings and cities, and disallows paradigm shifts that are necessary for sustainable solutions. An integrative approach is one that advocates synergy between disciplines and stakeholders across different domains of knowledge in the interest of holistic, sustainable solutions. In the programme, the Integrated Project Studios will be the vehicle for forging new mindsets and collaborative outlooks. Students will learn how decisions made by various disciplines collectively impact performance.

Focus on the *Asian Context*
A sustainable building is rooted in its context, in the exchanges between building and climate, society and economy. These local exchanges are embedded in global phenomena such as climate change. The programme, through the various taught modules, asks what it means to be designing for, and building in, Asia with its varying conditions, strengths and vulnerabilities.

Lessons from the *Singapore Experience*
The Singapore experience – as one example of an Asian model – will be examined in depth. Policies and initiatives relating to public housing, infrastructure, resource management and Green design will be reviewed. Their applicability to other Asian contexts will be critically discussed.

Exploring *Scalability of Solutions*; Buildings to Cities
Students will be exposed to varying scales of the built environment and their connectivity. Buildings as sub-units of neighbourhoods, neighbourhoods as networks extending into cities, are examined in the context of emerging eco-cities in Asia. The programme will examine the inter-dependency of architectural and urban scales.

PROGRAMME

The programme can be completed in one year, full time, or two years, part time.
To qualify for the Masters of Science degree a candidate must attain 40 modular credits (MC). These can be attained via combination of (i) Essential Modules that includes Integrated Project Studio and (ii) Programme Electives:

4 Essential Modules (4 modular credits each = 16 MCs)
2 Essential Modules/Integrated Project Studio (8 modular credits each = 16 MCs)
2 Programme Electives (4 modular credits each = 8 MCs)

Essential modules examine the challenges of making sustainable environments along with the knowledge needed to address these challenges; integrated project studios direct theory towards problem-solving with emphasis on integrative thinking.
Programme electives offer students an opportunity to acquire skill sets and specialised knowledge, such as building performance simulations, depending on the individual's background and future role in industry. Programme electives are picked from a basket of specified eight modules currently offered in related Masters programmes or may be any other approved graduate level modules on offer at the National University of Singapore.

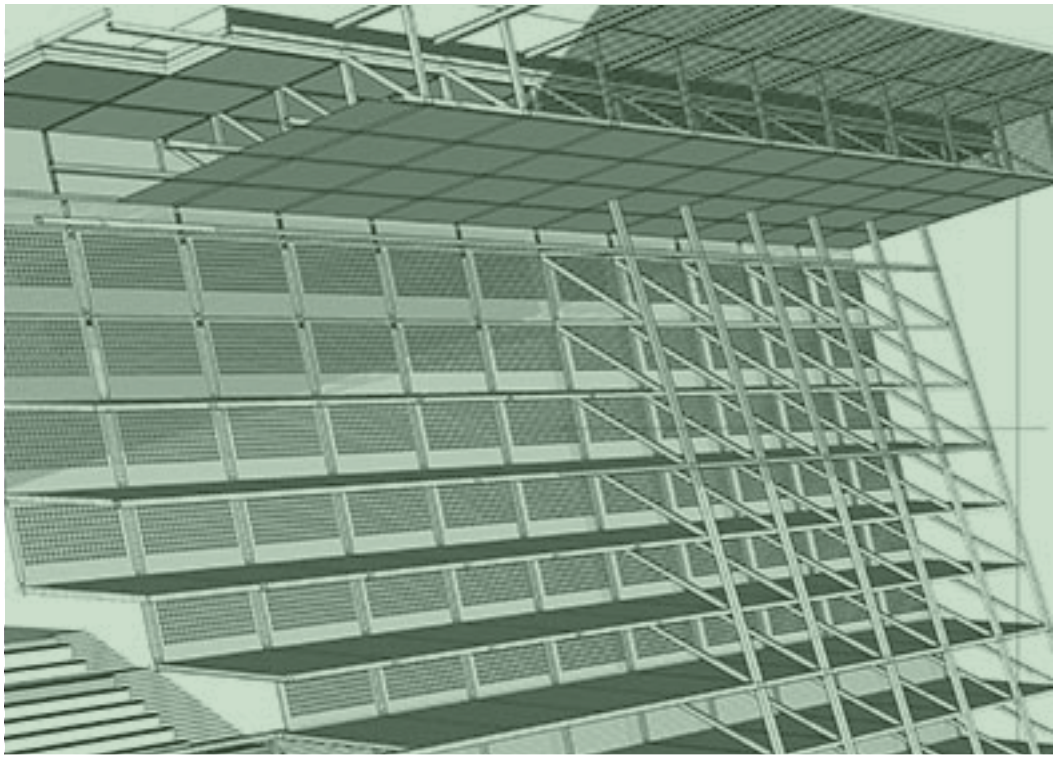
Module Code/Title		**Modular Credits**
Semester 1		
ISD5101 Integrated Project Studio 1		8
ISD5103 Green Buildings in the Tropics		4
ISD5104 Energy and Ecology		4
Programme Elective 1		4
	Sub total	20
Semester 2		
ISD5102 Integrated Project Studio 2		8
ISD5105 Principles of Sustainable Urbanism		4
ISD5106 Sustainability Models and Blueprints		4
Programme Elective 2		4
	Sub total	20
	Total	40

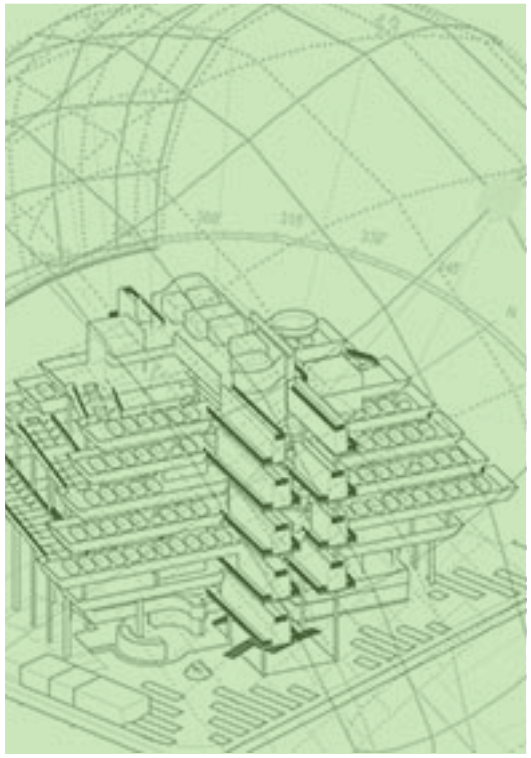
Essential Modules & Programme Electives

Refer to programme website for details on the essential modules and programme electives: www.sde.nus.edu.sg/MSCISD

Graduation Requirements

Successful completion of the programme requires a candidate to pass 40 Modular Credits. The graduation requirements of 40 modular credits are to be done within a maximum period of 4 semesters for full-time candidates, and 6 semesters for part-time candidates, and with a minimum Cumulative Average Point (CAP) of 3.





ADMISSIONS

Entry Requirements

Candidates are selected on the basis of their academic qualifications and relevant industry experience. An applicant must submit the following:

1. Evidence of a bachelor's degree with honours in Architecture, Landscape Architecture, Planning/Urban Design, Project and Facility Management, Engineering or other building-related degree programmes, or qualifications as may be approved by National University of Singapore's Senate
2. A detailed curriculum vitae and/or project portfolio describing at least two years of relevant practical experience after completion of first degree
3. TOEFL score of 580 or equivalent for applicants whose first degree is not taught in English

Application Process

Prospective candidates can apply www.sde.nus.edu.sg/drgs/drgs_Programmes.php

Application Deadlines

There are two intakes per academic year: January and August

Application deadlines: 30th September for the January intake, 15th March for the August intake.

Fees

All fees related information is available www.nus.edu.sg/registrar/edu/gd-fees.html

Scholarships

Full-time applicants from ASEAN (excluding Singapore citizens and SPR) with very good academic results may apply for the Graduate Scholarship for ASEAN Nationals (GSA).

For further information, contact programme director at the following address details or visit the homepage online:

Programme Director
Master of Science, Integrated Sustainable Design
School of Design and Environment
National University of Singapore
4 Architecture Drive
Singapore 117 566

Telephone +65 6516 8736
Facsimile +65 6779 3078
Email mscisd@nus.edu.sg
Web www.sde.nus.edu.sg/MSCISD

NUS National University of Singapore