School of Design & Environment

School's Commitment

The School of Design and Environment is known for its strong education, research and service in Singapore's built environment. This reputation is based on its long history of the creation and impartation of knowledge, fostering of innovation and enterprise in Architecture, Industrial and Urban Design, Building and Real Estate.

The School comprises three departments: Architecture, Building, Real Estate and one division: Industrial Design.

The Division of Research and Graduate Studies spearheads graduate research and teaching programmes and promotes inter and multidisciplinary research among the various disciplines of the built environment.

Degree programmes in building and estate management were first offered in 1969 in the then Department of Building and Estate Management. This was subsequently changed to the School of Building and Real Estate. In June 2000, the Faculty of Architecture, Building and Real Estate changed its name to the School of Design & Environment. As a result of this change, Building and Real Estate were established as separate departments.

The Industrial Design degree programme was first offered in 1999 in the Department of Architecture. Since June 2010, the programme has been independent and established as a separate division.

Mission

The Department of Architecture aims to nurture creative global designers and critical thinkers for the Built Environment to shape Asia's future and the world. The mission of the Department of Building is to advance knowledge, educate students, and foster enterprise in project and facilities management. The Department of Real Estate aims to create and impart knowledge concerning the value and management of the built environment and nurture leaders for the real estate industry. The Division of Industrial Design aims to make life better through design by equipping students with trans-disciplinary skills and thinking processes required to find unmet needs, and to solve the complex problems involved in creating viable new products, experiences, interfaces and environments.

Key Contact Information

For up-to-date information, please refer to the School's website at: http://www.sde.nus.edu.sg

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Assoc Prof Florence LING Yean Yng	Vice-Dean (Admin & Finance)	3401	sdelyy	
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Assoc Prof OOI Thian Leong, Joseph	Dy Head, Dept. of Real Estate	3564	rstooitl	
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UNDERGRADUATE COURSEWORK				
Assoc Prof CHEAH Kok Ming	Programme Director, B.A. (Architecture) (Hons.)	3455	akickm	
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Mr Roland Sharpe FLORES	Level-2000 Advisor, B.A. (Architecture) (Hons.)	66012436	akirsf	
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Dr TAN Beng Kiang	Level-4000 Advisor, B.A. (Architecture) (Hons.)	1357	akitanbk	
Mr Clement Zheng	Level-1000 Advisor, B.A. (Industrial Design) (Hons.)	66012836	didzzc	
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Assoc Prof Paul William WORMALD	Level-3000 Advisor, B.A. (Industrial Design) (Hons.)	66011535	didpww	
Mr TAN Yan Han, Hans	Level-4000 Advisor, B.A. (Industrial Design) (Hons.)	3525	didtyhh	
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Assoc Prof HWANG Bon-Gang	Level-1000 Advisor, B.Sc.(Project & Facilities Mgt) (Hons.)	3423	bdghbg
Dr GOH Yang Miang	Level-2000 Advisor, B.Sc.(Project & Facilities Mgt) (Hons.)	3428	bdggym
Dr GOH Yang Miang	Level-3000 Advisor, B.Sc.(Project & Facilities Mgt) (Hons.)	3428	bdggym
Assoc Prof HWANG Bon-Gang	Level-4000 Advisor, B.Sc.(Project & Facilities Mgt) (Hons.)	3423	bdghbg
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Prof CHEW Yit Lin, Michael	Facilities Management Core Leader, (Project & Facilities Mgt)	3496	bdgchewm
Dr Grace WONG Khei Mie	Programme Director, B.Sc. (Real Estate) (Hons.)	3432	rstgwong
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Assoc Prof Jorg REKITTKE	Programme Director, Master of Landscape Architecture	3465	akijr
Prof Chandra SEKHAR	Programme Director, M.Sc. (Building Performance and Sustainability)	3479	bdgscs
Prof George OFORI	Co-Programme Director, M.Sc. (Environmental Management)	3421	bdgofori
Assoc Prof Tan Puay Yok	Co-Programme Director, M.Sc. (Environmental Management)	3531	akitpy
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Ms ZHENG Huiming	Management Assistant Officer, Dept. of Real Estate	1932	rstzh
Ms Avril TEH Aie Weei	Senior Executive, Div. of Industrial Design	8895	didtaw

3   Undergraduate Education

3.1   Degrees Offered

There are four programmes in the School of Design and Environment available on a full-time basis, leading to the degrees of:

* Bachelor of Arts (Architecture) (Hons.)

* Bachelor of Arts (Industrial Design) (Hons.)

* Bachelor of Science (Project & Facilities Mgt.) (Hons.)

* Bachelor of Science (Real Estate) (Hons.)

3.2   Degree Requirements

3.2.1   B.A. Architecture (Hons.) Programme

The B.A.(Arch) Hons. is a four years degree programme that comprises a general programmeallowing for a choice of four forms of specialisation. The specialisation tracks are in Design, Design Technology & Sustainability (DTS),Landscape Architecture(LA) and Urban Planning. The curriculum content for the first three years is common to both general andspecialisationcourses. The B.A.(Arch) Hons. programme is accredited by the Royal Institute of Architects (RIBA) to Part One standard.

The general programme terminates at the B.A.(Arch) Hons. degree whereas the specialisationcourses are concurrent with the Master of Architecture (M.Arch.),Master of Landscape Architecture (M.LA.)or Master of Urban Planning(M.UP) degree programme. Only students who have achieved creditable grades in design, i.e. at least a B- in design at the third year level will be permitted to opt for a specialisation. Students who obtain a C grade at third year level will continue in a general degree program leading to B.A (Arch).

Under this programme, students will no longer be required to take the design modules at fourth year level. In its place, students will take modules on Advanced Architectural Studies with options to focus on Design Computing, Architectural & Urban Heritage or Urban Studies. Students who graduate with a high CAP in the general programme would continue to have the opportunity to pursue other graduate programmes.

Career Opportunities and Professional Registration

Graduates with an B.A.(Arch)Hons. degree who have completed Advanced Architectural Studies on Design Computing, Architectural & Urban Heritage or Urban Studiespursue career in architectural practices, government agencies or in research and academia.
Graduates would also have opportunities to work in related fields including and not limited to interior design, industrial design, industrialised building systems, graphic design, commercial art and architectural journalism. Graduates who complete the Landscape Architecture (LA) or Urban Planning (UP)specialisation and graduate with B.A.(Arch)Hons.may also work in LA or UP.

NO.	MODULES	MCS
1	**University Requirements**	**20**
a	General Education Modules (GEM) 1 from Group A: Science & Technology 1 from Group B: Humanities & Social Sciences	8
b	Singapore Studies (SS)	4
c	Breadth	8
2	**Programme Requirements**	**120**
a	Essential modules taken within the Department	120
3	**Unrestricted Electives (UE)** [1]	**20**
	Total	**160**

Note 1:
The elective modules for the various specialisations can be used to fulfil the UE requirements.

Specialisations

Students who have achieved creditable grades in design, i.e. at least a B- in design at the third year level will be permitted to opt for specialisation. The two specialisation tracks in Design and Design Technology & Sustainability (DTS) will lead to the M.Arch. degree programme.
The Design specialisation track offers students the opportunity to focus on design ideas, innovation and conceptualisation from a theoretical framework. The DTS specialisation track is driven by the need to adopt evidence based research and simulative design processes in pursuing sustainability in architecture. Specialisation modules will be offered at the fourth year level.

The LA specialisation track enables students to migrate to the Masters in Landscape Architecture (M.LA.) programme. Specialisation modules will be offered at the third and fourth year levels. Students who have opted for the LA specialisation track after completion of second year level but fail to achieve creditable design grades at third year level will pursue the general degree programme.

Students who obtained at least B average indesign at third year level are eligible to be considered for Urban Planning specialization. The UP specialization allows students to proceed to the Master of Urban Planning programme subjected to fulfillment of the admission requirement.

Please refer to Table 2 for admission criteria to the general programme and specialisation tracks in the B.A (Arch) programme.

Progression for the Architecture Concurrent Degree Programme

The admission requirements for various tracks of the M.Arch,M.LA and M.UP programmes are summarized in Table 2.

Students will receive both B.A. (Arch) Hons./B.A. (Arch) (depending on his/her CAP) and M.Arch./ M.LA/M.UP degrees concurrently upon completing the Masters programme.

Table 2: Summary of the Architecture Concurrent Degree Programme

1]

	Master of Architecture			Master of Landscape Architecture	Master of Urban Planning	Master of Arts (Architecture) or Other NUS Graduate Programmes	
Level 5 (Masters)	-	**with specialisation in Urban Design**	**with specialisation in Design Technology &Sustainability**	**Master of Landscape Architecture**	**Master of Urban Planning**	**Master of Arts (Architecture) or Other NUS Graduate Programmes**	
Admission Criteria to Level 5	• Min B- average for AR4101 & AR4102 • Min 2.5 CAP • Portfolio Review and Interview for Discretionary Admission	• Min B+ average for AR4101 and AR4102 • Min CAP of 2.5 • Portfolio Review and Interview for all students who wish to read UD specialisation	• Min B- average for AR4103 & AR4104 • Min 2.5 CAP • Portfolio Review and Interview for Discretionary Admission	• Min B- average for LA4701 & LA4702 • Min 2.5 CAP • Portfolio Review and Interview for Discretionary Admission	• Min CAP of 3.0 for MUP modules	Subjected to admission criteria of M.A.(Architecture) or other NUS Graduate programmes	
Level 4 B.A (Arch)/ B.A (Arch) Hons	Specialisation in Design		Specialisation in Design Technology &Sustainability	Specialisation in Landscape Architecture	Specialisation in Urban Planning	General Programme	
Eligibility Criteria to proceed with Level 4	• Min B- average for AR3101/AR3101a & AR3102/AR3102a • Min B- for AR3102/AR3102a • Portfolio Review and Interview for Discretionary Admission			• Min B- average for AR3101a & AR3102a • Min B- for AR3102a (Portfolio Review and Interview for Discretionary Admission)	• Min B average for AR3101/a and AR3102/a • Portfolio Review and Interview for Discretionary Admission	• Min C grade for AR3101/AR3101a & AR3102/AR3102a	
Level 3							
Level 2	Common programme leading to RIBA Part 1						
Level 1							

Listing of Modules

The four-year B.A. (Arch) programme is structured as follows:

Table 3: B.A. (Arch) Curriculum – General Programme

	LEVEL 1		LEVEL 2		LEVEL 3		LEVEL 4	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Design	AR1101 Design 1 (8 MCs)	AR1102 Design 2 (8 MCs)	AR2101 Design 3 (8 MCs)	AR2102 Design 4 (8 MCs)	AR3101 Design 5 (8 MCs)	AR3102 Design 6 (8 MCs)	AR4001 Advanced Architectural Study 1 (8 MCs)	AR4002 Advanced Architectural Study 2 (8 MCs)
History Theory	Intro Art & Design [1] (4 MC)		Hist Core 01 [2] (4 MC)		Hist Core 02 [2] (4 MC)			
Urban & Landscape		AR1724 Intro to Landscape Arch (4 MC)	AR2223 Theory of UD & Planning (4 MC)				UD5221 Theory & Elements of UD (4 MC)	

	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Tech Environment	AR1327 Structural Principles (4 MC)	AR1721 Climate Responsive Arch (4 MC)	AR2521 Digital Modelling and Simulation (4 MC)	AR2723 Strategies for Sustainable Arch (4 MC)		AR3721 Environmental Systems and Construction (4 MC)		
		AR1326 Arch Construction (4 MC)		AR2327 Architecture, Structure & Construction (4 MC)				
Management					AR3421 Intro to Arch Practice (4 MC)			

General Education Modules (GEM) – 8 MCs
Singapore Study Module (SS) – 4 MCs
Breadth (Elective modules outside SDE) – 8 MCs
Unrestricted Electives (within/outside SDE) (UE) – 20 MCs

Note 1:

Select one module – either AR2224 Ideas and Approaches in Design or AR2225 Reading Visual Images

Note 2:

Two History & Theory modules selected from a basket: AR2221 History and Theory of SEA Architecture, AR2222 History and Theory of Western Architecture and AR2226 History and Theory of Modern Architecture

Table 4: B.A. (Arch) Curriculum – Specialisation in Design

	LEVEL 1		LEVEL 2		LEVEL 3		LEVEL 4	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Design	AR1101 Design 1 (8 MC)	AR1102 Design 2 (8 MC)	AR2101 Design 3 (8 MC)	AR2102 Design 4 (8 MC)	AR3101 Design 5 (8 MC)	AR3102 Design 6 (8 MC)	AR4101 Design 7^ (8 MC)	AR4102 Design 8^ (8 MC)
History Theory	Intro Art & Design [1] (4 MC)		Hist Core 01 [2] (4 MC)		Hist Core 02 [2] (4 MC)		AR5011 Research Methodology^# (4 MC)	AR5221 Contemporary Theories^# (4 MC)
Urban & Landscape		AR1724 Intro to Landscape Arch (4 MC)	AR2223 Theory of UD & Planning (4 MC)				UD5221 Theory & Elements of UD (4 MC)	
Tech Environment	AR1327 Structural Principles (4 MC)	AR1721 Climate Responsive Arch (4 MC)	AR2521 Digital Modelling and Simulation (4 MC)	AR2723 Strategies for Sustainable Arch (4 MC)		AR3721 Environmental Systems and Construction (4 MC)	AR5321 Advanced Architectural Technology^# (4 MC)	
		AR1326 Arch Construction (4 MC)		AR2327 Architecture, Structure & Construction (4 MC)				
Management					AR3421 Intro to Arch Practice (4 MC)			

General Education Modules (GEM) – 8 MCs
Singapore Study Module (SS) – 4 MCs
Breadth (Elective modules outside SDE) – 8 MCs

Note 1:

Select one module – either AR2224 Ideas and Approaches in Design or AR2225 Reading Visual Images

Note 2:

Two History & Theory modules selected from a basket: AR2221 History and Theory of SEA Architecture, AR2222 History and Theory of Western Architecture and AR2226 History and Theory of Modern Architecture

^ Five Design Specialisation modules – two studio-based and three other modules
# Specialisation Elective

Table 5: B.A. (Arch) Curriculum – Specialisation in Design Technology and Sustainability

	LEVEL 1		LEVEL 2		LEVEL 3		LEVEL 4	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Design	AR1101 Design 1 (8 MC)	AR1102 Design 2 (8 MC)	AR2101 Design 3 (8 MC)	AR2102 Design 4 (8 MC)	AR3101 Design 5 (8 MC)	AR3102 Design 6 (8 MC)	AR4103 Arch & Tech Design 1^ (8 MC)	AR4104 Arch & Tech Design 2^ (8 MC)
History Theory	Intro Art & Design [1] (4 MC)		Hist Core 01 [2] (4 MC)		Hist Core 02 [2] (4 MC)			
Urban & Landscape		AR1724 Intro to Landscape Arch (4 MC)	AR2223 Theory of UD & Planning (4 MC)				UD5221 Theory & Elements of UD (4 MC)	
Tech Environment	AR1327 Structural Principles (4 MC)	AR1721 Climate Responsive Arch (4 MC)	AR2521 Digital Modelling & Simulation (4 MC)	AR2723 Strategies for Sustainable Arch (4 MC)		AR3721 Environmental Systems and Construction (4 MC)	AR5321 Advanced Architectural Technology^# (4 MC)	
		AR1326 Arch Construction (4 MC)		AR2327 Architecture, Structure & Construction (4 MC)			Tech Module 1 ^#* (4 MC)	Tech Module 2 ^#* (4 MC)
Management					AR3421 Intro to Arch Practice (4 MC)			
General Education Modules (GEM) – 8 MCs Singapore Study Module (SS) – 4 MCs Breadth (Elective modules outside SDE) – 8 MCs								
Unrestricted Electives (within/outside SDE) (UE) – 8 MCs								

Note 1:

Select one module – either AR2224 Ideas and Approaches in Design or AR2225 Reading Visual Images

Note 2:

Two History & Theory modules selected from a basket: AR2221 History and Theory of SEA Architecture, AR2222 History and Theory of Western Architecture and AR2226 History and Theory of Modern Architecture

^ Five DTS specialisation modules – two studio-based and three other modules,
# Specialisation Elective
* Two modules selected from a basket of Technology modules as advised by the Department

Table 6: B.A. (Arch) Curriculum – Specialisation in Landscape Architecture

	LEVEL 1		LEVEL 2		LEVEL 3		LEVEL 4	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Design	AR1101 Design 1 (8 MC)	AR1102 Design 2 (8 MC)	AR2101 Design 3 (8 MC)	AR2102 Design 4 (8 MC)	AR3101a Design 5 (LA Emphasis) (8 MC)	AR3102a Design 6 (LA Emphasis) (8 MC)	LA4701 MLA Studio: Quarter^ (8 MC)	LA4702 MLA Studio: City^ (8 MC)
History Theory	Intro Art & Design [1] (4 MC)		Hist Core 01 [2] (4 MC)		Hist Core 02 [2] (4 MC)			
Urban & Landscape		AR1724 Intro to Landscape Arch (4 MC)	AR2223 Theory of UD & Planning (4 MC)		LA3201 History & Theory of Landscape Arch^ (4 MC)	LA4212 Tropical Plant Identification ^# (4 MC)	LA4301 Material and Design^# (4 MC)	LA4202 Planting Design^# (4 MC)
							LA5301 Geo Design^# (4 MC)	LA5302 Detail Design^# (4 MC)
Tech Environment	AR1327 Structural Principles (4 MC)	AR1721 Climate Responsive Arch (4 MC)	AR2521 Digital Modelling & Simulation (4 MC)	AR2723 Strategies for Sustainable Arch (4 MC)		AR3721 Environmental Systems and Construction (4 MC)		
		AR1326 Arch Construction (4 MC)		AR2327 Architecture, Structure & Construction (4 MC)				
Management					AR3421 Intro to Arch Practice (4 MC)			
General Education Modules (GEM) – 8 MCs Singapore Study Module (SS) – 4 MCs Breadth (Elective modules outside SDE) – 8 MCs								

Note 1:
Select one module – either AR2224 Ideas and Approaches in Design or AR2225 Reading Visual Images

Note 2:
Two History & Theory modules selected from a basket: AR2221 History and Theory of SEA Architecture, AR2222 History and Theory of Western Architecture and AR2226 History and Theory of Modern Architecture

^ Eight LA specialization modules – two studio-based and six other modules
# Specialisation Elective

Table 7:   B.A. (Arch) Curriculum – Specialisation in Urban Planning

	Level 1		Level 2		Level 3		Level 4	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
							DEP5101 Urban	DEP5103

Design	AR1101 Design 1 (8 MC)	AR1102 Design 2 (8 MC)	AR2101 Design 3 (8 MC)	AR2102 Design 4 (8 MC)	AR3101 Design 5 (8 MC)	AR3102 Design 6 (8 MC)	Analysis Workshop & DEP5101A Qualitative Methods for Urban Planning (8 MCs)^	Urban Planning Studio & DEP5103A Quantitative Methods for Urban Planning (8 MCs) ^
History Theory	Intro Art & Design* (1) (4 MC)		Hist Core 01*(2) (4 MC)		Hist Core 02* (2) (4 MC)			
Urban / Landscape/ Urban Planning		AR1724 Intro to Landscape Arch (4 MC)	AR2223 Theory of UD & Planning (4 MC)				DEP5102 Urban Planning History &Theory (4 MCs) ^	DEP5104 Urban & Regional Economics (4 MCs) ^ #
							UD5521 Planning Process (4 MCs) ^ #	MUP Elective 2 (4 MCs) ^ #
							MUP Elective 1 (4 MCs) ^ #	MUP Elective 3 (4 MCs) ^ #
Tech Environment	AR1327 Structural Principles (4 MC)	AR1721 Climate Responsive Arch (4 MC)	AR2521 Digital Modelling & Simulation (4 MC)	AR2723 Strategies for Sustainable Arch (4 MC)		AR3721 Environmental Systems and Construction (4 MC)		
		AR1326 Arch Construction (4 MC)		AR2327 Architecture, Structure and Construction (4 MC)				
Management					AR3421 Intro to Arch Practice (4 MC)			

General Education Modules (GEM) – 8 MCs
Singapore Study Module (SS) – 4 MCs
Breadth (Elective modules outside SDE) – 8 MCs

*(1) – Select one module – either AR2224 Ideas and Approaches in Design or AR2225 Reading Visual Images
*(2)- Two History & Theory modules selected from a basket: AR2221 History and Theory of SEA Architecture, AR2222 History and Theory of Western Architecture and AR2226 History and Theory of Modern Architecture
^Ten UP specialisation modules – four studio-based and six other modules,
Specialisation Elective

Teaching Approach

Design modules are taught through design studios. Critique sessions will form part of the studio procedure in teaching. Lecture modules include formal lectures, followed by seminars/tutorials. Field trips, site visits, measurement and study of buildings for research, investigation and documentation may be involved.

Assessment and Examination

Assessment criteria will vary according to subject content. In the Department of Architecture, design modules are assessed by 100% "continuous assessment" (CA). The other essential modules may also be assessed by 100% CA or a combination of CA and Examination.

Students who fail an essential module will retake the module when it is next offered and must sit for the examination in that Semester. A retake module refers to a module where students have to attend lectures and tutorials and complete assignments and examinations. A new CA grade has to be obtained.

Students who fail a GEM/SS/Breadth/UE module may either replace it with a new GEM/SS/Breadth/UE module or retake the failed module the following year. There is no limit to the number of times a student may retake the same GEM/SS/Breadth/UE module.

A student who has passed the examination of a module will not be permitted to retake the same module for the purpose of improving his/her grade. This condition does not apply to the Design modules where the prerequisite for progression to the next level is a C grade. Students who achieve a D grade will be required to retake the Design module.

Progression of Students

Please see the table below:

Minimum MCs (in general) for promotion to the next level	ARK1 -> ARK2 [>=40 MC] ARK2 -> ARK3 [>=80 MC] ARK3 -> ARK4 [>=120 MC]
Additional requirements	Must pass Design with a minimum C grade

Graduation Requirements for four-year B.A. (Arch.) Programme

Students are required to take all essential modules offered in the semester to which they have progressed, provided they have passed the relevant prerequisites. In addition, they may take modules to satisfy University and other requirements.

Minimum Graduating criteria for

- B.A. (Arch) Hons.: Minimum Grade C for Design and CAP 3.2
- B.A. (Arch): Minimum Grade C for Design and CAP 2.0

Students who exit the concurrent degree programme at B.A. (Arch) Level 4 and consequently seek admission to M.Arch,M.LA or M.UP would be required to fulfil a minimum CAP of 3.5 and other criteria governing admission as determined at the point of application.

Advanced Placement Credits

Polytechnic diploma holders admitted to the programme may be granted advanced placement credits (APCs) for relevant modules. This is subject to Departmental consideration, given the wide range of subject modules from the polytechnics.

For up-to-date APCs list, please refer to:
http://www.sde.nus.edu.sg/acad/download/SDE_APC_%20as%20of%203%20Jan%202013.pdf

3.2.2   B.A. (Industrial Design) (Hons.) Programme

The B.A. (ID) programme at NUS was first offered in 1999 with support from the Faculty of Engineering and School of Business.

The Bachelor of Arts in Industrial Design, B.A. (ID), is a four-year undergraduate honours programme, consisting of courses crafted with our synergistic three-pronged approach:

1. Design Thinking: Out-of-box innovation strategies and investigative methods to discover new ideas and unmet needs.
2. Multi-Disciplinary Aptitudes: Behavioral sciences, social economics, business strategy, engineering and technology knowledgedevelop entrepreneurial strategic thinking and holistic problem-solving.
3. Artistic Sensibility: Training of imagination, taste, and craft-like ability to give pleasing and appropriate aesthetics and emotion to ideas, through traditional and 2D/3D digital means, so that solutions are both functional and desirable.

The combined approaches equip our graduates with high-level strategic thinking, and enable them to translate problems and ideas to tangible, desirable solutions, i.e. meaningful products, environments and experiences that people love to have, love to use - and those which have a big impact on lives.

As part of our strategy to be thought leaders in industry, a major component of the course is a series of industry-sponsored 'vertical studio platforms'. These are project teams comprising a mix of year 2 to year 4 students, encouraging cross-pollination of thoughts, skills and

learning.

In these platforms, students tackle both conceptual and real-life projects led by our industry collaborators, e.g. Asus, Dell, L'Oreal, Estee Lauder, BMW Group DesignworksUSA, Tupperware, Toshiba, Osim, ICI, Swarovski, HansGrohe, Risis and Nakamichi.

Students may customize their individual course during the 4 years by selecting from amongst these different industry platforms - Each student will get the opportunity to be involved in 6-7 of these projects.

The programme has been proven to be effective in grooming students for the design and related industries. Apart from the success in local and international competitions and awards, recent graduates have achieved recognition in gaining scholarships for further studies as well as being placed in well-known design practices and reputable companies.

Students can also opt to do a second major in Management (Technology), offered by School of Business, in four years.

International Exposure

To broaden our students' exposure to global challenges, two-thirds of each cohort are involved in one-semester overseas exchange programme during their 3rd year. Students typically go to distinguished design schools in Switzerland, France, Japan, Netherlands, Finland, USA, Germany, Italy and China.

Career Opportunities

Students are educated to become expert innovators and master problem-solvers. These attributes make them highly valuable in any industry.

Graduates pursue careers as industrial designers, interaction designers, brand and packaging designers, design managers, product managers and innovation consultants. It is also possible for industrial designers to rise to corporate leadership levels in the areas of creative innovation or design. These are highly-coveted positions, such as Chief Designer, Chief Innovation Officer (CIO), etc.

Armed with design, business and technological knowledge, graduates will be well-positioned to serve in R&D companies, technology start-ups, design consultancies, service industries, marketing sectors and government agencies as well as in design education.

Table 1: Curriculum Structure of the B.A. (Industrial Design) Programme

NO.	MODULES	MCS
1	**University Requirements**	**20**
a	General Education Modules (GEM) 1 from Group A: Science & Technology 1 from Group B: Humanities & Social Sciences	8
b	Singapore Studies (SS)	4
c	Breadth	8
2	**Programme Requirements**	**120**
a	Essential modules taken within the Department	120
3	**Unrestricted Electives (UE)**	**20**
	Total	160

Table 2: B.A. (ID) programme is structured as follows for AY2012/2013 onwards:

	LEVEL 1		LEVEL 2		LEVEL 3		LEVEL 4	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Engineering	ID1321 Materials for ID (4 MCs)		ID2323 Technology for Design (4 MCs)	ID2324 Manufacturing for Design (4 MCs)				
Marketing		MKT1003 Principles of Marketing (4 MCs)						

	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Design Skills and Knowledge	ID1111 Modelling for ID (4 MCs)	ID1112 Modelling and Sketching for Design (4 MCs)	ID2111 Computer Aided ID (4 MCs)					
	ID1223 History & Theory of ID (4 MCs)	ID1121 Human Centred Design (4 MCs)	ID2123 Design Process & Research (4 MCs)				ID4121 Project Research (4 MCs)	
Design Studio	ID1105 Design Fundamentals 1 (8 MCs)	ID1106 Design Fundamentals 2 (8 MCs)	ID2105 Design for Context & Sustainability (8 MCs)	ID2106 Design Platforms 1 (10 MCs)	ID3105 Design Platforms 2 (10 MCs)	ID3106 Design Platforms 3 (10 MCs)	ID4105 Design Platforms 4 (10 MCs)	ID4106 Design Thesis Project (12 MCs)
General Education Modules (GEM) – 8 MCs Singapore Study Module (SS) – 4 MCs Breadth (Elective modules outside SDE) – 8 MCs Unrestricted Electives (within/outside SDE) (UE) – 20 MCs								

Table 3: B.A. (ID) programme is structured as follows for students admitted in AY2011/2012 and earlier:

	LEVEL 1		LEVEL 2		LEVEL 3		LEVEL 4	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Engineering Related	ME2103 Eng. Visualisation Modelling (3 MCs)		ID2321 Design for Production-Metals (4 MCs)	ID2322 Design for Production-Plastics (4 MCs)				
Marketing		MKT1003 Principles of Marketing (4 MCs)						
Design Related Lectures	AR1221 Ideas and Approaches in Design (4 MCs)	ID1121 Human Factors in Design (4 MCs)	ID2122 Ecodesign & Sustainability (4 MCs)	ID2121 Design in the Urban Setting (4 MCs)	ID3122 Design Inventions & Innovations (4 MCs)	ID3121 Design Case Study (4 MCs)	ID4121 Project Research (5 MCs)	
	ID1321 Materials for ID (4 MCs)	ID1223 History & Theory of ID (4 MCs)						
Design	ID1103 Basic Design & Comm 1 (8 MCs)	ID1104 Basic Design & Comm 2 (8 MCs)	ID2103 Design for Context (8 MCs)	ID2104 Design for Connectivity (8 MCs)	ID3103 Design for Interior Env (8 MCs)	ID3104 Design for Culture & Identity (8 MCs)	ID4103 Design Detailing (12 MCs)	ID4104 Design Thesis Project (12 MCs)
General Education Modules (GEM) – 8 MCs Singapore Study Module (SS) – 4 MCs Breadth (Elective modules outside SDE) – 8 MCs # Unrestricted Electives (within/outside SDE) (UE) – 16 MCs								

Students are required to read one of the below modules as Breadth in Year 2:
- MKT2413 Marketing Research
- MKT2401 Asian Markets & Marketing Management
- MKT2411 Retail Entrepreneurship
- MKT2412 Global Marketing
- DSC2006 Operations Management
- TR2201 Entrepreneurial Marketing
- TR2202 Technological Innovation

- TR3001 New Product Development

Table 4: **Industrial Design Unrestricted Electives**

List of Unrestricted Electives	Offered In
ID2113 Visual Communication Design	Semester 1
ID3122 Innovation & Design	Semester 1
ID3123 Interaction Design	Semester 1
ID2112 Digital Design & Fabrication	Semester 2
ID2122 Ecodesign & Sustainability	Semester 2
ID3124 Creative Communication & Design Argumentation	Semester 2

Teaching Approach

Design modules are taught through design studios. Critique sessions will form part of the studio procedure in teaching. Lecture modules include formal lectures, followed by seminars/tutorials.

Assessment and Examination

Assessment criteria will vary according to the modules offered. In the Division of Industrial Design, design modules are assessed by 100% "continuous assessment" (CA). The other essential modules may also be assessed by 100% CA or a combination of CA and examination.

Students who fail an essential module will retake the module when it is next offered and must sit for the examination in that Semester. For a retaken module, students have to attend lectures and tutorials and complete assignments and examinations. A new CA grade has to be obtained.

Students who fail a GEM/SS/Breadth/UE module may either replace it with a new GEM/SS/Breadth/UE module or retake the failed module the following year. There is no limit to the number of times a student may retake the same GEM/SS/Breadth/UE module.

A student who has passed the examination of a module will not be permitted to retake the same module for the purpose of improving his/her grade.

Progression of Students

Please see the table below:

Minimum MCs (in general) for promotion to the next level	IDS1 -> IDS2 [>=40 MC] IDS2 -> IDS3 [>=80 MC] IDS3 -> IDS4[>=120 MC]

Graduation Requirements for four-year B.A. (ID) (Hons.) Programme

Students are required to take all essential modules offered in the semester to which they have progressed, provided they have passed the relevant prerequisites. In addition, they may take modules to satisfy University and other requirements. 'Fulfilling' Modular Credits means reading and passing the modules, which carry the Modular Credits.

Advanced Placement Credits

Polytechnic diploma holders admitted to the programme may be granted advanced placement credits (APCs) for relevant modules. This is subject to Departmental consideration, given the wide range of subject modules from the polytechnics.

For up-to-date APCs list, please refer to: http://www.sde.nus.edu.sg/acad/download/SDE_APC_%20as%20of%203%20Jan%202013.pdf

3.2.3   B.Sc. (Project & Facilities Management) (Hons.) Programme

The Department of Building offers the full-time B.Sc. (Project and Facilities Management) undergraduate programme, a professional honours degree programme designed to be completed in four years by students proceeding at a normal pace.

Students can also opt to do a second major in Management or Management (Technology). The double major can be completed in four years (i.e., normal time) through double counting.

1st year students can opt to do one freshman seminar module as an unrestricted elective module. Currently, the department offers two freshman seminar modules, FMD1201 (Policies for Building Sustainable Cities) and FMD1202 (Green Building Technologies for Sustainable Cities).

Recognition by Professional Bodies

The B.Sc. (Project and Facilities Management) programme was offered for the first time in AY2006/07. The programme is accredited by both international and local professional bodies such as Chartered Institute of Building, UK and the Royal Institution of Chartered Surveyors, UK and Singapore Institute of Surveyors and Valuers.

Table 1:   Curriculum Structure of the B.Sc. (Project and Facilities Mgt.) (Hons.) Programme for students admitted in AY2013/2014 and earlier

NO.	MODULES	MCS
1	**University Requirements**	**20**
a	General Education (GE) 1 from Group A: Science & Technology 1 from Group B: Humanities & Social Sciences	8
b	Singapore Studies (SS)	4
c	Breadth	8
2	**Programme Requirements**	**124**
a	Foundation modules	80
b	Project Management modules	20 min.
c	Facilities Management modules	16 min.
d	Dissertation	8
3	**Unrestricted Electives (UE)**	**16**
	Total	160

Table 2: Curriculum Structure of the B.Sc. (Project and Facilities Mgt.) (Hons.) Programmefor students admitted after AY2014/2015^

No.	Modules	MCs
1	**UNIVERSITY REQUIREMENTS**	**20**
a	General Education (GE) 1 from Group A: Science & Technology 1 from Group B: Humanities & Social Sciences	8
b	Singapore Studies (SS)	4
c	Breadth	8
2	**PROGRAMME REQUIREMENTS**	**120**
a	Foundation modules	48
b	Project Management modules	28 min.
c	Facilities Management modules	24 min.
d	Technology Core	12 min.
e	*1 Dissertation OR **Any 2 Programme Electives (for students who are not taking Dissertation)	8
3	UNRESTRICTED ELECTIVES (UE)	**20**
	Total	160

Note:
*Dissertation track (students with CAP 3.5 and above): 28 modules (112 MCs) + 1 Dissertation (8 MCs) = 29 modules (120 MCs).
**Non-dissertation track (students with CAP below 3.5): 28 modules (116 MCs) + 2 programme electives (8 MCs) = 30 modules (120 MCs)

Table 3: B.Sc. (Project and Facilities Mgt) Programme Structure (2013 Cohort and earlier)

	Level 1		Level 2		Level 3		Level 4	
	Sem 1	Sem 2	Sem 3	Sem 4	Sem 5	Sem 6	Sem 7	Sem 8
Foundation (Compulsory)	ST1131 Introduction to Statistics (4 MCs)	EC1301 Principles of Economics (4 MCs)	PF2106 Project and Facilities Communication Management (4 MCs)	PF2105 Research Method (4 MCs)	PF3101 Project Scheduling and Control (4 MCs)	PF3103 Project Management Law II (PF2101#) (4 MCs)	PF4102 Contract and Procurement Management (PF2101#, PF3103#) (4 MCs)	PF4101 Dissertation (8 MCs)
	PF1101 Fundamentals of Project Management (4 MCs)	PF1103 IT for Projects (4 MCs)	PF2101 Project Management Law I (4 MCs)	PF2103 Measurement (Building Works) (PF1102#) (4 MCs)		PF3102 Facilities Planning and Design (4 MCs)		PF4103 Total Building Performance (4 MCs)
	PF1102 Visualisation in Design and Technology (4 MCs)	PF1104 Environmental Science for Building (4 MCs)	PF2102 Structural Systems (4 MCs)	PF2104 M&E Engineering Systems (PF1104#) (4 MCs)				
		PF1105 Fundamentals of Facilities Management (4 MCs)	PF2107 Construction Technology (4 MCs)	PF2108 Project Cost Management (4 MCs)				
Project Management			PF2201 Scope and Design Management (4 MCs)	PF2203 Quality and Productivity Management (4 MCs)	PF3205 Advanced Measurement (4 MCs)	PF3201 Measurement (Specialist Works) (PF2103#, PF2104#) (4 MCs)	PF4202 Safety, Health and Environmental Management (4 MCs)	PF4203 Project Dispute Management (4 MCs)
					PF3202 Project Development and Finance (4 MCs)	PF3204 Project Risk Management (4 MCs)	PF4206 Building Information Modelling (4 MCs)	
Facilities Management			PF2301 Development Technology and Management (4 MCs)	PF2303 Materials Technology (4 MCs)	PF3302 Energy Management (4 MCs)	PF3303 Intelligent Facilities (PF2104#) (4 MCs)	PF4301 Strategic Facilities Management (4 MCs)	PF4307 Event Management (4 MCs)
					PF3301 Maintainability of Facilities (4 MCs)			PF4305 Green Development (4 MCs)

General Education Modules (GEM) – 8 MCs
Singapore Studies Module (SS) – 4 MCs
Breadth (Elective modules outside SDE) – 8 MCs
Unrestricted Electives (within/outside SDE) (UE) – 16 MCs
Pre-requisite module

Table 4: B.Sc. (Project and Facilities Mgt) Programme Structure (2014 Cohort)

	Level 1		Level 2		Level 3		Level 4	
	Sem 1	Sem 2	Sem 3	Sem 4	Sem 5	Sem 6	Sem 7	Sem 8
								PF4101

Category								
Foundation (Compulsory)	PF1106 Quantitative methods for PFM (4 MCs)	PF1104 Environmental Science for Building (4 MCs)	PF2106 Project and Facilities Communication Management (4 MCs)	PF2105 Research Methods (4 MCs)				Dissertation (with CAP of 3.5 and above) (8 MCs)
	PF1101 Fundamentals of Project Management (4 MCs)	PF1105 Fundamentals of Facilities Management (4 MCs)	PF2101 Project & Facilities Management Law (4 MCs)	PF2108 Project Cost Management (4 MCs)			PF4102 Contract and Procurement Management (4 MCs)	
	PF1102 Visualisation in Design and Technology (4 MCs)	PF1103 IT and BIM for Projects (4 MCs)	PF2107 Construction Technology (4 MCs)	PF2103 Measurement (Building Works) (4 MCs)				
Project Management			PF2201 Scope and Design Management (4 MCs)		PF3205 Advanced Measurement (Pre-req: PF2501) (4 MCs)	PF3201 Measurement (Specialist Works) (Pre-req: PF2503) (4 MCs)	PF4206 Building Information Modelling (4 MCs)	PF4207 Project Risk Management (4 MCs)
			PF2204 Project Development and Finance (4 MCs)	PF2203 Quality and Productivity Management (4 MCs)	PF3206 Project Scheduling and Control (4 MCs)	PF3207 Project Management Law (4 MCs)	PF4202 Safety, Health and Environmental Management (4 MCs)	PF4203 Project Dispute Management (4 MCs)
Facilities Management					PF3302 Energy Management (Pre-req: PF2503) (4 MCs)	PF3305 Facilities Planning and Design (Pre-req: PF2501) (4 MCs)	PF4307 Event Management (4 MCs)	PF4308 Event Management Case studies (4 MCs)
				PF2304 Operations and Maintenance Management (4 MCs)	PF3301 Maintainability of Facilities (4 MCs)	PF3304 Facilities Management Law (4 MCs)	PF4301 Strategic Facilities Management (4 MCs)	PF4305 Green Development (4 MCs)
Technology			PF2501 Structural Systems (4 MCs)	PF2503 M&E Engineering Systems (4 MCs)		PF3501 Intelligent Facilities (4 MCs)		
			PF2502 Development Technology and Management (4 MCs)	PF2504 Materials Technology (4 MCs)				PF4501 Total Building Performance (4 MCs)

General Education Modules (GEM) – 8 MCs
Singapore Studies Module (SS) – 4 MCs
Breadth (Elective modules outside SDE) – 8 MCs
Unrestricted Electives (within/outside SDE) (UE) – 16 MCs

* Note: Students may take PF2401 Environmental Management and PF3401 Practical Training Scheme to fulfil their Unrestricted Electives (UE) requirement.

Students on the B.Sc. (Project and Facilities Management) programme can enrol in the University Scholars Programme (USP). Details on application and updates on the USP can be found at : http://www.usp.nus.edu.sg

Students who have not passed or been exempted from the Qualifying English Test at the time of admission to the University must take additional English modules (depending on their QET results), in their first level of study. More information on this can be found on: http://www.nus.edu.sg/celc/programmes/qet.php

Length of Degree Programme

The programme is designed to allow students to progress at their own pace. Students who are able to progress at a faster pace can complete the programme in three-and-a-half years if they take additional foundation modules in semester two of their Second and Third Levels. Those doing the programme at a regular pace should complete it in four years.

Assessment and Examination

Students are assessed on a mixture of class work and end-of-semester examinations for each module they had registered for in the semester. Continuous Assessment (CA) may be in the form of essays, laboratory work, projects, reports, or tests. Students' performance during tutorials may be assessed as part of the CA.

Students who fail in a foundation module have to retake the foundation module the following year. For a retaken module, students have to attend lectures and tutorials and complete assignments and examinations. A new CA grade has to be obtained.

Students who fail a non-foundation module may either replace it with a new module or retake the failed module the following year. There is no limit to the number of times a student may retake the same non-foundation module.

Students who have passed any module are not allowed to retake the module to improve their grades.

Progression of Students

Please see the table below:

Minimum MCs (in general) for promotion to the next level	PFM1 -> PFM2 [>=40 MC] PFM2 -> PFM3 [>=80 MC] PFM3 -> PFM4 [>=120 MC]

Graduation Requirements for four-year B.Sc. (Project and Facilities Mgt.) (Hons.) Programme

Students have to take all foundation modules offered in the semester to which they have progressed, provided they have passed the relevant prerequisites. In addition, they may take modules to satisfy University and other requirements. To graduate, a student must obtain a minimum of 160 MCs in accordance with the requirements shown in Table 1. 'Fulfilling' Modular Credits means reading and passing the modules which carry the Modular Credits.

Advanced Placement Credits

Polytechnic diploma holders admitted to the programme may be granted advanced placement credits (APCs) for relevant modules. This is subject to Departmental consideration, given the wide range of subject modules from the polytechnics.

For up-to-date APCs list, please refer to:

http://www.sde.nus.edu.sg/acad/download/SDE_APC_%20AY2014-15_as%20of%205%20Nov%202013.pdf

3.2.4   B.Sc. (Real Estate) (Hons.) Programme

The Department of Real Estate offers a full-time B.Sc. (Real Estate) undergraduate programme. This is a professional honours degree programme to be completed in four years by students proceeding at a normal pace. The programme is fully recognised by renowned local and foreign professional institutions.

Student may opt to complete a specialisation in either real estate finance or urban planning by completing 24 MCs of distinctive modules from either one of the lists of programme elective modules.

Recognition by Professional Bodies

The B.Sc. (Real Estate) degree is accredited by the Royal Institution of Chartered Surveyors, UK, and the Singapore Institute of Surveyors and Valuers. Graduates of the B.Sc. (Real Estate) programme are exempted from all the examinations required for professional membership of these institutions.

Career Opportunities

Students in this programme should be interested in the built environment covering issues from planning, development, management, and the social, economic, political to technical facets of the built environment. In Singapore, career opportunities for Real Estate graduates are found in both public and private sectors. Graduates are employed in the fields of real estate fund management (including REITs), real estate

development and investment, urban planning, property valuation and corporate real estate management.

Table 1: Curriculum Structure of the B.Sc. (Real Estate) (Hons.) Programme

NO.	MODULES			MCS
1	**University Requirements**			20
a	General Education (GE) 1 from Group A: Science & Technology 1 from Group B: Humanities & Social Sciences			8
b	Singapore Studies (SS)			4
c	Breadth			8
2	**Programme Requirements**			120
a	Essential modules taught by the Department of Real Estate			76
b	Essential modules taught by other Departments			12
c	Dissertation OR Real estate case study plus programme elective/unrestricted elective			8
d	Programme elective modules			24
3	**Unrestricted Electives (UE)**			20
	Total			160

Programme Structure

The programme is structured into three core areas of study as listed below:

Core Areas

1. <u>Real Estate Finance and Investment:</u>
   - Economic and financial theories
   - Real estate investment and financing decisions
   - International real estate

2. <u>Real Estate Development and Management:</u>
   - Dynamics of the property development process
   - Real estate valuation
   - Real estate law

3. <u>Urban Policy and Urban Planning:</u>
   - Planning theories and techniques
   - Public policies and real estate markets
   - Regional real estate sectoral markets

Table 2: B.Sc. (Real Estate) Programme Structure

LEVEL 1		LEVEL 2		LEVEL 3		LEVEL 4	
Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
RE1101 Fundamentals of Real Estate Finance (4 MCs)	EC1301 Principles of Economics (4 MCs)	ES2007D Professional Communication (4 MCs)	RE2104 Real Estate Finance (RE1101[#]) (4 MCs)	RE3101 Advanced Real Estate Valuation (RE2107[#]) (4 MCs)	RE3105 Regional Real Estate Development (RE3103[#]) (4 MCs)	RE4000 Dissertation (8 MCs)	
						Programme Elective / Unrestricted Elective (4 MCs)	RE4001 Real Estate Case Study (4 MCs)
RE1102	RE1103	RE2101 Real Estate		RE3102 Advanced	RE3106 Residential	Programme	Programme

Urban Land Use and Development (4 MCs)	Property and Facilities Management (4 MCs)	Market Analysis (RE1104 #, EC1301#) (4 MCs)	RE2105 Land Law (4 MCs)	Topics in Urban Planning (RE2103#) (4 MCs)	Property Management (RE2106#) (4 MCs)	Elective / Unrestricted Elective (4 MCs)	Elective/ Unrestricted Elective (4 MCs)
RE1105 Understanding Design and Construction (4 MCs)	RE1104 Principles of Real Estate Valuation (4 MCs)	RE2102 Real Estate Economics (EC1301#) (4 MCs)	RE2106 Real Estate Marketing & Negotiation (4 MCs)	RE3103 Real Estate Development (RE2101#, RE2102#) (4 MCs)	Programme Elective / Unrestricted Elective (4 MCs)	Programme Elective / Unrestricted Elective (4 MCs)	Programme Elective / Unrestricted Elective (4 MCs)
ST1131 Introduction to Statistics (4 MCs)	ULR2 (4 MCs)	RE2103 Urban Planning (RE1102#) (4 MCs)	RE2107 Property Tax and Statutory Valuation (RE1104#) (4 MCs)	RE3104 Real Estate Investment Analysis (RE2104#) (4 MCs)	Programme Elective / Unrestricted Elective (4 MCs)	Programme Elective / Unrestricted Elective (4 MCs)	Programme Elective / Unrestricted Elective (4 MCs)
ULR1 (4 MCs)	ULR3 (4 MCs)	ULR4 (4 MCs)	ULR5 (4 MCs)	RE3107 Real Estate Practice & Ethics (RE2104#, RE2107#) (4 MCs)	Programme Elective / Unrestricted Elective (4 MCs)	Programme Elective / Unrestricted Elective (4 MCs)	Programme Elective / Unrestricted Elective (4 MCs)
General Education Modules (GEM) – 8 MCs Singapore Studies Module (SS) – 4 MCs Breadth (Elective modules outside SDE) – 8 MCs Unrestricted Electives (within/outside SDE) (UE) – 20 MCs							

Pre-requisite module

Students who have not passed the Qualifying English Test at the time of admission to the University must take an additional module in English in Level One. Students who are exempted from the Qualifying English Test need not do an additional module in English.

Students admitted can undertake one of the 3 academic routes:
• B.Sc. (Real Estate)
• B.Sc. (Real Estate) with Specialisation in Real Estate Finance
• B.Sc. (Real Estate) with Specialisation in Urban Planning

A specialisation will be awarded if a student completes a basket of 24 MCs (6 modules) of stipulated Restricted Electives . The specialisation will be noted in a student's transcript. It is not compulsory for students to pursue a specialisation.

A student may opt to complete a specialisation in either real estate finance or urban planning by completing 24 MCs of distinctive modules when they have completed the fourth semester.

Table 3: Real Estate Programme Electives

LIST OF PROGRAMME ELECTIVES		
Real Estate Finance Specialisation	**Urban Planning Specialisation**	**Other Programme Elective**
#RE3201 Research Methodology (Pre-req: RE2101, RE2104)		
#RE3211 Real Estate Finance Law (Pre-req: RE2105)	#RE3221 Real Estate Development Law (Pre-req: RE2105)	#RE2201 Quantitative Methods in Real Estate (Pre-req: ST1131)
#RE3212 Corporate Investment in Real Estate (Pre-req: RE3104)	#RE3222 Urban Design and Conservation (Pre-req: RE3102)	*RE4202 Real Estate Internship Programme (Pre-req: RE3101, RE3103, RE3104)
#RE4210 Real Estate Finance Seminar (Pre-req: RE4211, RE4212) (Compulsory Module)	#RE4220 Urban Planning Seminar (Pre-req: RE4221, RE4222) (Compulsory Module)	*RE4203 Topics in Real Estate (Summer Programme) (Pre-req: RE3105)
*RE4211 REIT Management (Pre-req: RE3104)	*RE4221 Advanced Urban Planning Theories (Pre-req: RE3102)	*RE4204 Advanced Real Estate Marketing (Pre-req: RE2106)
*RE4212 Real Estate Securitization (Pre-req: RE3104)	*RE4222 Public Policy and Real Estate Markets (Pre-req: RE3103, RE3104)	

#RE4213 Real Estate Risk Analysis and Management (Pre-req: RE3104, RE4211, RE4212)	#RE4223 Urban Planning in Asian Cities (Pre-req: RE3102, RE4221, RE4222)	

* Electives offered in Semester 1

\# Electives offered in Semester 2

Table 4: Real Estate Unrestricted Electives

List of Unrestricted Electives	Offered In
RE1301 Real Estate Business	Semester 1
RE2301 GIS for Real Estate	Semester 2
RE4301 Housing Markets and Housing Policies	Semester 1

Concurrent Degree Programme: BSc (Real Estate) + Master of Urban Planning

BSc (RE) student intending to opt for the Urban Planning Specialisation can also choose to pursue the MUP concurrently. After a 5-year candidature, they will get 2 degrees:
-BSc (RE) with a specialisation in UP; and
-MUP

Eligibility Criteria
At the end of the 3rd year in the BSc (RE) course, applicants must obtain a CAP of at least 3.5. Applicants will be subjected to an interview for discretionary admission.

Continuation Criteria at the end of 4th year
At the end of the 4th year, candidate of the CDP must have completed RE4000 (Dissertation), and also obtain a minimum CAP of 3.0 (for MUP modules only).
Graduating Criteria at the end of 5th year, A minimum CAP of 3.0 (for MUP modules taken in Year 4 and Year 5).

Table 5:   B.Sc. (Real Estate) Programme + Master of Urban Planning Structure

Level 1		Level 2		Level 3		Level 4	
Sem 1	**Sem 2**	**Sem 1**	**Sem 2**	**Sem 1**	**Sem 2**	**Sem 1**	**Sem 2**
RE1101 Fundamentals of Real Estate Finance (4 MCs)	EC1301 Principles of Economics (4 MCs)	ES2007D Professional Communication (4 MCs)	RE2104 Real Estate Finance (RE1101#) (4 MCs)	RE3101 Advanced Real Estate Valuation (RE2107#) (4 MCs)	RE3105 Regional Real Estate Development (RE3103#) (4 MCs)	RE4000 Dissertation (8 MCs)	
RE1102 Urban Land Use and Development (4 MCs)	RE1103 Property and Facilities Management (4 MCs)	RE2101 Real Estate Market Analysis (RE1104#, EC1301#) (4 MCs)	RE2105 Land Law (4 MCs)	RE3102 Advanced Topics in Urban Planning (RE2103#) (4 MCs)	RE3106 Residential Property Management (RE2106#) (4 MCs)	DEP5101 Urban Analysis Workshop & DEP5101A Qualitative Methods for Urban Planning (8 MCs)^	DEP5103 Urban Planning Studio & DEP5103A Quantitative Methods for Urban Planning (8 MCs) ^
RE1105 Understanding Design and Construction (4 MCs)	RE1104 Principles of Real Estate Valuation (4 MCs)	RE2102 Real Estate Economics (EC1301#) (4 MCs)	RE2106 Real Estate Marketing and Negotiation (4 MCs)	RE3103 Real Estate Development (RE2101#, RE2102#) (4 MCs)	Unrestricted Elective (4 MCs)	DEP5104 Urban & Regional Economics (4 MCs) ^	DEP5102 Urban Planning History &Theory (4 MCs) ^
ST1131	ULR2	RE2103	RE2107	RE3104			

Introduction to Statistics (4 MCs)	(4 MCs)	Urban Planning (RE1102#) (4 MCs)	Property Tax and Statutory Valuation (RE1104#) (4 MCs)	Real Estate Investment Analysis (RE2104#) (4 MCs)	Unrestricted Elective (4 MCs)	UD5521 Planning Process (4 MCs) ^	MUP Elective 1 (4 MCs) ^
ULR1 (4 MCs)	ULR3 (4 MCs)	ULR4 (4 MCs)	ULR5 (4 MCs)	RE3107 Real Estate Practice and Ethics (RE2104#, RE2107#) (4 MCs)	Unrestricted Elective (4 MCs)		
				Unrestricted Elective (4 MCs)	Unrestricted Elective (4 MCs)		
General Education Modules (GEM) – 8 MCs Singapore Studies Module (SS) – 4 MCs Breadth (Elective modules outside SDE) – 8 MCs Unrestricted Electives (within/outside SDE) (UE) – 20 MCs # Pre-requisite module ^ UP specialisation modules							

Student Workload

In any one semester, students are not allowed to take more than 8 examination papers (excluding English), whether essential, elective, Singapore Studies Module or GE modules.

Length of Degree Programme

The programme is designed to allow students to progress at their own pace. Students doing the programme at a regular pace should complete it in four years. Students who are able to progress at a faster pace can complete the programme in three-and- a-half years if they take additional essential modules in each of the four semesters in their Second and Third Levels.

Progression of Students

Please see the table below:

Minimum MCs (in general) for promotion to the next level	RST1 -> RST2 [>=40 MC] RST2 -> RST3 [>=80 MC] RST3 -> RST4 [>=120 MC]

Graduation Requirements for four-year B.Sc.(Real Estate) (Hons.) Programme

Students have to take all essential modules offered in the semester to which they have progressed, provided they have passed the relevant prerequisites. In addition, they may take modules to satisfy University and other requirements. To graduate, a student must obtain a minimum of 160 MCs.

Advanced Placement Credits

Polytechnic diploma holders admitted to the programme may be granted advanced placement credits (APCs) for relevant modules. This is subject to Departmental consideration, given the wide range of subject modules from the polytechnics.

For up-to-date APCs list, please refer to:

http://www.sde.nus.edu.sg/acad/download/SDE_APC_%20as%20of%203%20Jan%202013.pdf

3.3   Multidisciplinary Opportunities

3.3.1   Minor Programmes

3.3.1.1   Minor in Project Management

Curriculum

The MC requirement for the Minor Programme in Project Management is 24 MCs. To satisfy this requirement, students must read outside their major, the following modules offered by the Department of Building.

Three compulsory modules:
- PF1101   Fundamentals of Project Management
- PF3206   Project Scheduling and Control
- PF2204   Project Development and Finance

Any three elective modules from:
- PF2201   Scope and Design Management
- PF2203   Quality and Productivity Management
- PF4207   Project Risk Management
- PF4203   Project Dispute Management

3.3.1.2   Minor in Real Estate

Curriculum

The requirement for the Minor Programme in Real Estate is 24 MCs. To satisfy this requirement, students must read outside their major, the following modules offered by the Department of Real Estate. All modules are worth 4 MCs.

1.   Four 'Essential' modules from the following list, subject to the prerequisites (if any) for each module.

MODULES	PREREQUISITES	PRECLUSIONS	OFFERED IN
RE1103 Property and Facilities Management	-	RE1805	Semester 2
RE1104 Principles of Valuation	-	RE2803	Semester 2
RE2101 Real Estate Market Analysis	RE1104, EC1301	RE3801	Semester 1
RE2102 Real Estate Economics	EC1301	RE2802	Semester 1
RE2103 Urban Planning	RE1102	RE2801	Semester 1
RE2104 Real Estate Finance	RE1101	RE2804	Semester 2
RE2106 Real Estate Marketing and Negotiation	-	RE2805	Semester 2
RE2107 Property Tax and Statutory Valuation	RE1104	RE3805	Semester 2
RE3103 Real Estate Development	RE2101, RE2102	RE4802	Semester 1
RE3104 Real Estate Investment Analysis	RE2104	RE3802	Semester 1
RE3107 Real Estate Practice and Ethics	RE2104, RE2107	RE3803	Semester 1
RE4222 Public Policy and Real Estate Markets	RE3103, RE3104	RE4801	Semester 1

2.   At least two Unrestricted Elective Modules offered by the Department of Real Estate. Students must read RE1102 Urban Land Use and Development (which will be made available to students taking Minor in Real Estate as an Elective) to satisfy partially the MC requirement for Minor Programme in Real Estate.

For more details of modules offered in the respective semester, please email Mdm Srividya at rstssn@nus.edu.sg or call 65161341.

3.   For overlapping modules, the Minor Programme will consider double counting of MCs up to a maximum of 4 MCs towards the MCs-requirement in the Minor in Real Estate.

3.3.1.3   Minor in Urban Studies

Curriculum

This Minor offered jointly by the Department of Real Estate and Department of Geography is open to all students. The requirement for the Minor Programme in Urban Studies is 24 MCs. To satisfy this requirement, students must read a minimum of six modules (three or four Core Modules, and three or two Elective Modules respectively) from the lists below. At least four modules required for the Urban Studies Minor must be taken outside the student's own department and at least two modules must be from level-3000 or 4000. All modules are worth 4 MCs.

1. Students should choose at least three core modules from the list below. These three modules must comprise two RE + one GE modules or two GE + one RE modules.

Level 1

MODULES	PREREQUISITES	PRECLUSIONS	OFFERED IN
RE1101 Fundamentals of Real Estate Finance	-	RE1804	Semester 1
RE1102 Urban Land Use and Development	-	RE1803	Semester 1
RE1103 Property and Facilities Management	-	RE1805	Semester 2
GE2204 Cities in Transition	-	-	-
GE3204 Cities and Regions: Planning for Change	-	GE3203	-

2. Students have to choose two or more elective modules from the lists below to obtain a total of six or more modules inclusive of the core modules.

Level 2

MODULES	PREREQUISITES	PRECLUSIONS	OFFERED IN
AR2223 Theory of Urban Design and Planning	-	-	-
GE2202 Economy and Space	-	-	-
GE3241 Geographies of Social Life	-	-	-
RE2104 Real Estate Finance	RE1101	RE2804	Semester 2

Level 3

MODULES	PREREQUISITES	PRECLUSIONS	OFFERED IN
EC3381 Urban Economics	EC2101 / EC2151	EC3235	-
EC3382 Transport Economics I	EC2101 / EC2151	EC3210	-
GE3219 Globalisation and the Asian Cities	-	-	-
GE3236 Transport and Communications	-	GE2203	-
RE3103 Real Estate Development	RE2101, RE2102	RE4802	Semester 1
SC3206 Urban Sociology	-	-	-

Level 4

Modules	Prerequisites	Preclusions	Offered In
RE4211 REIT Management	RE3104	RE4905	Semester 1
RE4301 Housing Markets and Housing Policies	-	RE4903	Semester 1

3. For overlapping modules, the Minor Programme will consider double counting of MCs up to a maximum of 8 MCs towards the MCs-requirement in the Minor in Urban Studies.

3.4   Special Programmes

3.4.1   Student Exchange Programme [SEP] and NUS Overseas Colleges [NOC] Programme

Students can spend up to one semester in approved overseas Universities offering similar modules. These modules will count towards the fulfilment of the number of modules required of a student to graduate. One academic year's absence is allowed for students joining the NOC Programme.

3.4.2   Practical Training Scheme (PF3401) – Department of Building

B.Sc. (Project and Facilities Management) students undertake a minimum of nine weeks of Practical Training which is normally held at the end of the second semester in the Third Level. The aim of this scheme is to give students essential real-life work exposure in Singapore or abroad. The Department finds suitable placements with an organisation in the construction or real estate industry for students, and their work is supervised by a staff member of the Department, and a senior person within the organisation to which they are attached. The module will contribute 4 MCs and a CS/CU grade is awarded.

3.4.3   Real Estate Internship Programme – Department of Real Estate

The Real Estate Internship Programme (REIP) is a partnership between industry and academia in the provision of real estate education and training. It provides opportunities during the university vacation for internship training in mainstream private property companies as well as public institutions that serve the industry.

The Department will secure the necessary positions with reputable organisations that are able to provide quality training and exposure for the undergraduates. Participation in the REIP is offered only to selected third year B.Sc. (Real Estate) undergraduates after a rigorous application and selection process. The minimum duration of an internship is nine weeks. This module will contribute 4 MCs.

3.4.4   Summer Programme – Department of Real Estate

This module is designed for third-year undergraduates to examine country-specific issues in socioeconomic, demographic and political dimensions underlying the real estate processes. Students will attend lectures and seminars in both NUS and partner universities in the country of discussion. Site visits to projects and organisations are an integral part of the module. Students will work on a project for in-depth study of selected aspects of the real estate industry in the country. This module precludes students who take the Real Estate Internship Programme module.

3.5   Financial Assistance / Scholarships

Undergraduate students in the School of Design and Environment can apply for this loan for the purpose of assisting in the payment of travelling expenses incurred by students to travel overseas during the vacation each year for the purpose of stimulation and broadening of outlook in the respective disciplines of architecture, building and real estate. The loans also cover trips organised by the Departments.

3.5.1   SDE Travelling Loan Fund

Undergraduate students in the School of Design and Environment can apply for this loan for the purpose of assisting in the payment of travelling expenses incurred by students travelling overseas during the vacation each year for the purpose of stimulation and broadening of outlook in the respective disciplines of architecture, building and real estate. The loans also cover trips organised by the Departments.

3.5.2   K H Tan Bursary & K H Tan Scholarship

K H Tan Bursary was established in 2011 for deserving undergraduate students at the Department of Architecture. The Donor, Mr Tan Kwang Hwee donated an expendable gift sum of $45,000 and pledged to support financially needy full-time undergraduate students at the Department. A total of nine bursaries valued at S$5,000 were disbursed in AY2011/12. Mr Tan has made another expendable gift for five bursaries to be disbursed in AY2012/13. Mr Tan has re-designated the K H Tan Bursary from Department of Architecture to the School of Design and Environment, making it available to all undergraduates at the School.

In January 2013, the School received from Newsman Realty Pte. Ltd., the Donor a generous pledge of an expendable gift to continue awarding 5 bursaries for next three (3) academic years, starting from AY2013/14 to AY2015/16. A new scholarship named as K H Tan Scholarship was also established. Two scholarships will be awarded to incoming and existing undergraduates of the School for three (3) academic years, starting from AY2013/14 to AY2015/16. The bursary and scholarship are tenable for one year for the academic year in which it is awarded.

3.5.3   ONG & ONG Travelling Fellowship – Department of Architecture

Up to 2 Travelling Fellowships will be offered to BA(Arch) Level 4 students proceeding to NUS M.Arch studies and/or M.Arch. students from any of the Research Teaching Groups in the Department each year. The value of each award is up to $10,000. Selection is based on the strength of proposed study & travel plan and academic excellence

3.5.4   Kumpulan Akitek Prize – Department of Architecture

The top 5% of the best students in design from the second to fourth year of study in the BA(Architecture) programme will be invited to form their own team, preferably drawn from each of the three years. This is to encourage the spirit of team-work and group learning. Winners of the prize which is a one-off grant of $10,000 must work together to develop a design-research undertaking.

Though the teams are given flexibility to explore thematic issues of the time and their interests, the following are highly encouraged:
1.   Ecological Design in the Tropics
2.   Cultural Continuity and Traditional Forms in the contemporary settings
3.   Design for Society

3.5.5   Tun Tan Cheng Lock Scholarship – Department of Architecture

This is a one off scholarship valued at $4500 and is set up to support research in the area of urban and architectural heritage in Southeast Asia. The Department will provide another $2000 per academic year for publication and exhibition of the projects Up to 4 Scholarships will be awarded to students under the following categories each year:
1.   Up to two undergraduate students in third/fourth year of study in the Department and or
2.   One graduate student in the Department and/or
3.   Up to two undergraduate or graduate students in accredited architectural programmes in other universities, preferably in Southeast Asia.

The basis of award corresponds to the 3 categories of students:
1.   The scholarship supports the undergraduates on projects that require travelling within Southeast Asia.
2.   Research project related or connected to design thesis, dissertation or similar academic exercises. The study should preferably focus on urban and architecture heritage.
3.   The area of study should be related to disciplines of the built environment, such as environmental design, landscape architecture, urban and architectural heritage & management, urban studies or urban planning.

Recipients are required to put up an exhibition of their research/studies at the Tun Tan Cheng Lock Centre upon the completion of their projects.

3.5.6   Woh Hup Scholarship – Department of Building

The Woh Hup Scholarship is donated by Woh Hup Pte Ltd, commencing in AY2011/12. The scholarship is awarded to a 3rd year student in the BSc (Project and Facilities Management) programme. It is tenable for two years, subject to the student's progress. The same student shall continue to receive the award in his/her 4th year of study. Applicants should attain at least a CAP of 3.5, have a strong record of CCA involvement and demonstrate a commitment to community service.

3.5.7   Kong Mun Kwong Scholarship – Department of Building

The Kong Mun Kwong Scholarship is donated by Mr Kong Mun Kwong, commencing in AY2011/12. The scholarship is awarded annually to a student who has completed at least 20 MCs and not more than 80 MCs in the BSc (Project and Facilities Management) programme. It is tenable for two years, subject to the student's progress. Applicants should attain at least a CAP of 4.0, have a strong record of CCA involvement and demonstrate a commitment to community service.

3.5.8   Fission Scholarship – Department of Real Estate

Fission Group is a property development company in Singapore, established in 2006. Fission Group has been involved in numerous projects in the real estate development business and investment in various real estate projects, with a total value of more than S$500 million.

Melvin Poh and Francine Lee are both alumni of the former Building & Estate Management of NUS. They have both benefited from their education and would like to give back by making an expendable gift of $45,000 through their company, Fission Group, to the full-time undergraduates of Department of Real Estate.

The value of each award will be fixed at S$3,000 per annum. The first award is to be made in AY2012/13 and administer by the Department. The gift will allow the Department to award five merit-based scholarships per year. Two awards will be given to year 2 students and three awards will be given to year 3 students every year. Or three awards will be given to year 2 students and two awards will be given to year 3 students every year. The tenure of this Scholarship is three years.

3.5.9   DRE Endowed Bursary - Department of Real Estate

The DRE Endowed Bursary was established in 2012 as a faculty-level bursary. The donation drive was organized in the form of Building and Estate Management Alumni (BEMA) Fund Raising Golf Tournament held in August 2012.

This bursary is intended for needy undergraduate students from the Department of Real Estate. Two sub-named bursaries have been set-up. They are: DRE-Ascendas Bursary; and DRE-Lim Siew Bee Bursary
The Bursary is valued at S$3,000 each and is tenable only for the academic year in which it is awarded. The bursary is open for application from 1 February to 1 April for award in the following academic year starting in August.

3.5.10   Raffles Quay Asset Management Study Grant – Department of Real Estate

Raffles Quay Asset Management Pte Ltd has agreed to make an endowed gift of S$250,000 to the National University of Singapore to establish a bursary fund to support financially needy students who are "middle achievers" in the Department of Real Estate.

One bursary will be awarded to full-time Singaporean undergraduate undertaking the Bachelor of Science (Real Estate) programme in Year 2 and above in each academic year, starting from AY2014/2015.

Each Bursary is tenable for one year for the academic year in which it is awarded.

3.6   Academic Awards

Medals and book prizes are awarded only once in the academic year, after the Semester 2 Examination. In all instances, a prize-winner must be of sufficient merit. He/She must have passed all modules attempted and must be a good overall student. No award will be made unless there is a candidate of sufficient merit.

In general, to be eligible for consideration for an Academic Year Award, a student must have completed a minimum workload of 40 MCs, 80 MCs and 120 MCs for the Year 1, Year 2 and Year 3 awards respectively. In addition, students must have completed at least 36 MCs of graded modules within the academic year of the award.

The exception to this ruling would be students who are involved in internships, accelerated programmes or double degree programmes. For these students, they need to have a minimum of 24 MCs graded modules. In addition, students must have also completed a minimum of 16 MCs in the subject within the academic year.

Below is a full list of the medals and prizes for SDE undergraduates :

Department	Name of Award	Course / Year of Student	Award Criteria
Department of Architecture	Board of Architects Prize	BA(Arch) 1	Best student in First Exam
		BA(Arch) 2	Best student in Second Exam
		BA(Arch) 3	Best student in Third Exam
	Board of Architects Prize and Medal	BA(Arch) 4	Best student in Fourth Exam
	ICI Dulux Medal	BA(Arch) 4	Best student in Architectural Design
	RamalingamMedal	BA(Arch) 3	Best student in Architectural Structures & Construction Technology module
	Aedas Medal & Prize in Architectural Design	BA(Arch) 4	Student with highest average mark for AR4101 (Design 7) and AR4102 (Design 8)
	Architecture Alumni Fund (AAF) Prize for Distinction in Architectural Design	BA(Arch) 1	Student with highest average mark for AR1101 (Design 1) and AR1102 (Design 2)
		BA(Arch) 2	Student with highest average mark for AR2101 (Design 3) and AR2102 (Design 4)
		BA(Arch) 3	Student with highest average mark for AR3101/AR3101a (Design 5) and AR3102/AR3102a (Design 6)
	URA Urban Design Prize	BA(Arch) 4	Student with the highest average mark for AR2223 and UD5221

	Lee Kip Lin Medal and Prize for Best Graduating Student in Department of Architecture	BA(Arch) 4	BA (Architecture) graduating student attaining the highest Cumulative Average Point (CAP) in the final semester of study
	Lee Kip Lin Medal and Prize in Architectural History Studies	BA(Arch) 4	BA (Architecture) graduating student attaining the highest average mark in Architectural History Studies modules
Department	**Name of Award**	**Course / Year of Student**	**Award Criteria**
Division of Industrial Design	Milton Tan Gold Medal	BA(IDS) 4	Highest mark for design studio module ID4105 Design Platform 4
	Lee Kuan Yew Gold Medal	BA(IDS) 4	Best student throughout course of study
Department of Building	SISV Gold Medal	BSc(PFM) 4	Highest average weighted marks throughout the BSc (PFM) program
	Lee Kuan Yew Gold Medal	BA(PFM) 4	Best student throughout the course of study
	Sally Meyer Medal	BSc(PFM) 4	Highest CAP from PF4101 Dissertation and any two level 4 PF modules
	BEMA Gold Medal	BSc(PFM) 4	Highest mark in PF4304/PF4103/PF4501^ Total Building Performance
	Singapore Institute of Building Gold Medal	BSc(PFM) 4	Highest mark in PF4101 Dissertation
	SCAL Gold Medal	BSc(PFM) 4	Highest CAP in PF4101 Dissertation and essential modules PF2102/PF2501^ Structural Systems and PF3101/PF3206^ Project Scheduling & Control.
	Langdon & Seah (Singapore) Medal	BSc(PFM) 4	Highest CAP from: • PF2108 Project Cost Management • PF3201 Measurement (Specialist Works) • PF4102/PF4201 Contract and Procurement Management • PF4203 Project Dispute Management
	Rider Levett Bucknall Medal and Prize	BSc(PFM) 4	CAP of at least 4.50 for PF4102/PF4201 Contract & Procurement Management and PF3205 Advanced Measurement
	Eugene Seah Medal and Prize	BSc(PFM) 4	Highest CAP from PF2103 Measurement (Building Works) and PF3103/3203/PF3207^ Project Management Law II
Department of Real Estate	Lee Kuan Yew Gold Medal	BSc(RE) 4	Best student throughout the course of study
	SISV Gold Medal	BSc(RE) 4	Highest average weighted marks throughout the BSc (RE) program
	Sally Meyer Medal	BSc(RE) 4	Best student for the degree of Bachelor of Science (Real Estate)
	BEMA Gold Medal	BSc(RE) 4	Best student in Case Studies in Project Management or Real Estate Practice and Ethics
	World Valuation Congress Medal	BSc(RE) 4	Best student in Valuation modules
	Amos Koh Medal	BSc(RE) 4	Best student in the Dissertation module
Department	**Name of Award**	**Course / Year of Student**	**Award Criteria**
	Ascendas Medal and Prize	BSc(RE) 4	Student with highest average mark in both Real Estate Finance and Real Estate Investment Analysis
	Keppel Land Medal and Prize	BSc(RE) 4	Best student attaining highest mark for Real Estate Development
	Knight Frank Medal and Prize	BSc(RE) 4	Best student attaining highest mark for REIT Management
	SLA Medal and Prize	BSc(RE) 4	Best student who obtained the highest mark for Public Policy and Real Estate Markets
Department	Colliers Medal and Prize	BSc(RE) 4	Best Student who obtained the highest average mark for RE1104, RE2102, RE2104 and RE2106

of Real Estate	CBRE Medal and Prize	BSc(RE) 4	Best student who obtained the highest mark for Real Estate Market Analysis
	Huttons Marketing Medal and Prize	BSc(RE) 4	Best student in Real Estate Marketing and Negotiation
	Fission Medal and Prize	BSc(RE) 4	Best student in Urban Planning
	CapitaLand Medal and Prize	BSc(RE) 4	Best student who obtained the highest mark for Real Estate Risk Analysis and Management
	Seek Ngee Huat Medal and Prize	BSc(RE) 4	Best progress student with the greatest improvement on academic performance from year 3 to year 4

^ Subjected to approval by Senate

4 Graduate Education

4.1 Research Programmes

4.1.1 Degrees Offered

The research programmes offered in the School of Design and Environment are as follows:
- Master of Arts (Architecture)
- Master of Arts (Industrial Design)
- Master of Science (Building)
- Master of Science (Real Estate and Urban Economics)
- Doctor of Philosophy
- NUS-DTU Joint Ph.D. Programme

4.1.2 Degree Requirements

Master's Degree by Research

- Minimum CAP of 3.0 for all four modules (or 16 modular credits equivalent) taken under coursework requirements
- "Satisfactory" grade in graduate seminar module
- Satisfactory Grade of "C" or better in English Language Course (Intermediate Level), if the student is required to take the graduate English Language Course
- Pass in Master's thesis

Doctor of Philosophy (Ph.D.)

- Minimum CAP of 3.5 for all six modules (or 24 modular credits equivalent) taken under coursework requirements
- "Satisfactory" grade in doctoral seminar module
- Satisfactory Grade of "C" or better in English Language Course (Advanced Level), if the student is required to take the graduate English Language Course
- Pass in Qualifying Examination (includes a Comprehensive Written Examination and a closed door oral defence)
- Pass in Ph.D. Thesis and Oral Examination

4.2 Coursework Programmes

4.2.1 Degrees Offered

- Master of Architecture
- Master of Arts (Urban Design)
- Master of Landscape Architecture
- Master of Science (Building Performance and Sustainability)
- Master of Science (Project Management)
- Master of Science (Real Estate)
- M.B.A. (Real Estate)
- Master of Urban Planning
- Master of Science (Integrated Sustainable Design)

- Master of Science (Environmental Management)

4.2.2 Degree Requirements

4.2.2.1 Master of Architecture

Programme Objectives

The strategic objective of the M.Arch. programme is to prepare students for a professional career in architecture in a rapidly changing global context, with experiences developed from Singapore and international perspectives. It hopes to achieve this with a team of international academics and practitioners:

1. To develop intellectual and critical thinking skills in and around the field of architecture.
2. To develop rigour in the discipline of architectural design and the ability to integrate the many aspects - theoretical and practical – in the design process.
3. To develop ability in scholarly research.
4. To further the concept of tropical environment architecture.

Design is the central core discipline. It is complemented by other courses that focus on the technological, ethical, and professional and management aspects of architecture. Design constitutes approximately two thirds of the M.Arch. course content. The design programmes offered in the M.Arch. programme are generally more complex in nature. Students are expected to demonstrate rigour in their approach towards designs. The final schemes should not merely demonstrate competence but also draw in other ethical and cultural issues with which the schemes are engaged.

Entry Requirements

This is the final year of the architecture programme following a four-year undergraduate honours programme in architecture. Graduates of this programme will have a prerequisite degree for professional registration in Singapore.

Candidates are required to possess:

1. a B.A. (Arch) Hons. RIBA accredited degree   OR
2. four years of Architectural training, of which the first three years are from a RIBA Part 1 validated course and the fourth year is from a year of study in a RIBA Part 2 course equivalent to the fourth year of NUS B.A. (Arch.) Hons. programme.

Applicants holding a non-RIBA Part 1 accredited degree or qualification must provide proof of accreditation by a National Accreditation Board or the Board of Architects of the country of origin; or Board of Architects (Singapore), subjected to approval by the Board of Graduate Studies.

A preparatory course (a one- or two-year programme, depending on the candidate's academic performance and portfolio review) is usually mandatory for non-NUS degree holders and NUS graduates of the three-year Bachelor's programme in Architecture.

Candidates must complete Architectural Design track of the four-year B.A. (Arch.) Hons. programme (M.Arch. preparatory course for external candidates) with minimum CAP of 2.5, and minimum C for Year 4 Design in order to proceed to the M.Arch. programme.

Candidates who meet the relevant requisites would also be considered for entry to the **M.Arch.** programme with specialisation in **Urban Design** or **Design Technology and Sustainability.**

Graduation Requirements

Successful completion of the M.Arch. programme requires a candidate to complete 40 MCs of a dissertation and three essential modules. To graduate, students have to fulfil the degree requirement of:

- Minimum CAP of 3.0 and
- Minimum grade B- for AR5103

Period of Candidature

The programme is conducted on a full-time basis lasting one year consisting of two semesters. The maximum period of candidature is limited to four semesters.

Syllabus

Modules		MCs	Semester
AR5103	Architectural Design Thesis	24	1 & 2
AR5141	Dissertation	8	1
AR5421	Architectural Practice 1	4	1
AR5422	Architectural Practice 2	4	2
Total MCs		**40**	

4.2.2.2   Master of Architecture with specialisation in Urban Design

Programme Objectives

The rapid urbanisation of the Asian landscape and the equally swift transformation of its cities create an urgent need in the region for design professionals, especially practising architects and planners, to deal with problems of designing within existing urban fabrics and in the periphery of rapidly growing cities. Exposure to a wide scale of design issues ranges from the layout of towns and the restructuring of inner cities to the shaping of streets as settings for public life. The provision of open spaces that nurture civic consciousness also require in-depth consideration.

The M.Arch. programme with specialisation in Urban Design aims to offer a broad based education in the theory and practice of urban design to enhance the knowledge and abilities of professional architects involved in the design, creation, and evaluation of urban spaces. More specifically, the programme hopes to achieve the following objectives:

1. Produce environmentally and socially responsible professionals who are committed to the provision of good urban public areas.
2. Develop analytical and methodological skills that are critical foundations to urban design processes.
3. Provide exposure, at an advanced level, to the full range of issues that bear upon the design and realisation of large scale urban space.
4. Prepare students for advanced careers in urban design, consulting, research or public service, or in preparation for further academic training.

Entry Requirements

Entry requirements include completion of the Architectural Design track of the four-year B.A. (Arch) Hons programme with minimum CAP of 2.5, and minimum 'B+' average for Year 4 Design or its equivalent with portfolio review.

Candidates with qualifications deemed to be equivalent to first three years of the NUS B.A. (Arch) programme can be considered for admission to a preparatory course which is similar to the B.A. (Arch) Level 4 (Architectural Design Track) programme. Candidates can proceed to M.Arch. specialising in Urban Design upon completion of the preparatory programme and fulfilling the prerequisite CAP of 2.5 and minimum 'B+' average for Design with portfolio review.

Graduation Requirements

Successful completion of the M.Arch. (specialisation in Urban Design) requires a candidate to complete 44 MCs of a Dissertation and seven essential modules. To graduate, students have to fulfil the degree requirement of:

- Minimum CAP of 3.0 and

- Minimum C in UD5601 and UD5602 with at least 'B' - in either UD5601 or UD5602

Period of Candidature

The programme is conducted on a full-time basis lasting one year consisting of two semesters. The maximum period of candidature is limited to four semesters.

Syllabus

Modules		MCs	Semester
AR5141	Dissertation	8	1
AR5421	Architectural Practice 1	4	1
AR5422	Architectural Practice 2	4	2
UD5601	Urban Design Studio 1	8	1
UD5602	Urban Design Studio 2	8	2
UD5521	Planning Process: Quantitative and Policy Dimensions	4	1
UD5622	Methods of Urban Design and Urban Analysis	4	1
UD5628	Sustainable Urban Design and Development	4	2
Total MCs		**44**	

4.2.2.3 Master of Architecture with specialisation in Design Technology and Sustainability (DTS)

Programme Objectives

M.Arch. with specialisation in DTS offers a broad based architectural education that advances design investigation into technology and sustainability. It seeks to cultivate design approaches involving critical thinking, holistic perception, technical imagination and sustainability literacy. The programme aims to achieve the following objectives:

1. Produce environmentally and socially responsible professionals who are committed to the provision of comprehensive architectural design.
2. Develop analytical and methodological skills that are critical foundations to design processes integrating technology.
3. Provide exposure to the full range of issues that bear upon the design and realization of buildings addressing sustainability.

Entry Requirements

Entry requirements include the completion of the DTS track of the four-year B.A. (Arch) Hons. programme with (1) minimum CAP of 2.5 and (2) minimum B- average for AR4103 and AR4104.

Graduation Requirements

Successful completion of the M.Arch. with specialisation in DTS requires a candidate to complete 44 MCs of a Technical Dissertation and five essential modules. To graduate, students have to fulfil the degree requirement of:

- Minimum CAP of 3.0 and
- Minimum grade 'B' - for AR5104

Period of Candidature

The programme shall be conducted on a full-time basis lasting one year consisting of two semesters. The maximum period of candidature is limited to four semesters.

Syllabus

MODULES		MCS	SEMESTER
AR5104	Final Design Project	20	1 & 2
AR5142	Technical Dissertation	8	1
AR5421	Architectural Practice 1	4	1
AR5121	Special Topics in Technology	4	1 & 2
AR5422	Architectural Practice 2	4	2
AR5322	Renewable Resources and Architecture	4	1
Total MCs		**44**	

4.2.2.4   Master of Arts in Urban Design

Programme Objectives

The Master of Arts (Urban Design) programme is an intensive course that aims to inculcate in graduates the ability to study the city in more complex and inclusive terms and to design successful urban spaces that take into careful consideration current and future users based on an understanding of a wide range of issues including those impinging on economics, ecology, sociology, environmental psychology, technology, urban geography, cultural theory to real estate.

The primary aim of the Master of Arts (Urban Design) is to offer a broad-based education in the theory and practice of urban design to enhance the knowledge and abilities of professionals involved in the design, creation, and evaluation of urban spaces.

Entry Requirements

- Bachelor of Architecture / Bachelor of Arts (Architecture) (Hons) OR Master of Architecture OR Honours / Graduate degree in a related discipline (minimum 4-year undergraduate degree is required)
- Interview, and portfolio review where necessary
- Relevant experience in a related discipline is preferred

Graduation Requirements

Successful completion of the programme requires a candidate to:
Option 1: Complete one dissertation and to pass six essential modules and one elective.
Option 2: Do two elective modules in lieu of Dissertation, i.e., Pass six essential modules (including urban design studios) and three elective modules.

Total number of Modular Credits required is 44. Minimum CAP for graduation is 3.0.

Period of Candidature

The programme can be completed in one year on a full-time basis, or in two years on a part-time basis. The maximum period of candidature is four semesters for full-time candidates, and six semesters for part-time candidates.

Field Trip

Urban Design Studio 2 (UD5602) will include a compulsory one-week international workshop in the form of a field trip to a regional city to work with the relevant local planning/design authority and academic institution (cost of field trip borne by the student).

Syllabus

(Elective modules listed may not be offered in any one academic semester or year.)

* For students who choose to do two electives in lieu of Dissertation

	ESSENTIAL MODULES	MCS (OPTION 1)	MCS (OPTION 2)	SEMESTER
UD5641	Dissertation	8	-	2
UD5601	Urban Design Studio 1	8	8	1
UD5602	Urban Design Studio 2	8	8	2
UD5221	Theory and Elements of Urban Design	4	4	1
UD5521	Planning Process: Quantitative and Policy Dimensions	4	4	1
UD5622	Methods of Urban Design and Urban Analysis	4	4	1
UD5628	Sustainable Urban Design and Development	4	4	2
ELECTIVE MODULES		**MCS (OPTION 1)**	**MCS (OPTION 2)**	**SEMESTER**
Min. 1 module offered in Department/School		4	12*	1 or 2
Total MCs		44	44	-

4.2.2.5   Master of Landscape Architecture

Programme Objective

The Master of Landscape Architecture (MLA) is offered as a two-year, full-time professional degree programme. Modules are taught by highly qualified staff from the School of Design & Environment's Department of Architecture, who bring to the curriculum in-depth practical experience and cutting edge research.

The programme is unique in its focus on the urban elements of landscape architecture. This emphasis distinguishes it from many traditional landscape schools which focus on rurality or sub-urbanity. The MLA programme aims to develop specialised knowledge which addresses the challenges facing Asian cities and mega cities situated in the tropics. With as much as two thirds of the world's population living in the tropics and the sheer richness in variety of flora and fauna, this Asian context poses a thought-provoking challenge for urban landscape designers.

In addition, the programme's location in Singapore allows students access to a veritable landscape architecture design laboratory for new urban landscape concepts such as vertical greenery, sky-rise greenery and urban green networks.

Entry Requirements

This is a two-year full-time professional degree programme providing education and training in landscape architecture. The programme consists of 15 essential modules spread over two years: Masters Preparatory Year and Masters Final Year.

Students with a previous Bachelor degree in Landscape Architecture recognised by the Department of Architecture and Singapore Institute of Landscape Architects will be admitted to the preparatory year which is similar to the 4th year of the Bachelor of Arts (Architecture) [B.A. (Arch.)] (specialisation in Landscape Architecture) programme.

Candidates are required to pass all the modules in the preparatory programme with a minimum B- average for LA4701 and LA4702 and minimum CAP of 2.5 before they are allowed to proceed to the one-year M.LA. final year programme.

Graduation Requirements

The M.LA. programme requires a candidate to complete 40 MCs of a dissertation and six essential modules. To graduate, students have to fulfil the additional requirements of:

• Minimum CAP of 3.0 and

• Minimum grade B- for both LA5701 and LA5702

Period of Candidature

The programme shall be conducted on a full-time basis lasting two years consisting of four semesters. The maximum period of candidature is limited to six semesters.

Syllabus

M.LA Year 1 - Preparatory Programme		MCs	
Semester 1			
	LA4701	MLA Studio: Quarter	8
	LA3201	History and Theory of Landscape Architecture	4
	LA4301	Material and Design	4
	A5301	Geo Design	4
Semester 2			
	LA4702	MLA Studio: City	8
	LA4202	Planting Design	4
	LA4212	Tropical Plant Identification	4
	LA5302	Detail Design	4
Total MCs			40
M.LA Year 2 - Master of Landscape Architecture		MCs	
Semester 1			
	LA5701	MLA Studio: Country	8
	LA5201	Policy of Landscape	4
	LA5222	Urban Ecology and Design	4
	UD5221	Theory and Elements of Urban Design	4
Semester 2			
	LA5702	MLA Studio: Region	8
	LA5303	Urban Greening: Technologies And Techniques	4
	LA5742	Dissertation	8
Total MCs			40

4.2.2.6   Master of Science in Building Performance and Sustainability

Programme Objective

The Master of Science (Building Performance and Sustainability) programme is a multi-disciplinary educational programme. The aim of the programme is to offer graduates of different disciplines, who are engaged in design, construction, commissioning, operation and maintenance of building systems and services, an opportunity to acquire knowledge and practice in the broad field of Building Performance and Sustainability. This knowledge is vital for those engaged in such activities in the 21st century that confronts mankind with irreversible effects of climate change and potentially adverse consequences now and in the future. This global phenomenon necessitates a paradigm shift towards creating buildings that are not only comfortable and healthy for the occupants but are also sustainable. Whilst the Master of Science (Building Performance and Sustainability) programme is firmly embedded with the challenges and issues in the building sector faced in the rapidly developing urbanization of cities in the tropical belt of the world that has the potential to impact in excess of 2 billion people, it also addresses similar fundamental issues related to other climates and cultures elsewhere in the world.

Entry Requirements

At least a bachelor's degree with honours in a relevant discipline.
Candidates should have at least two years of relevant practical experience after their first degree.
A good TOEFL score (580) or equivalent is required of applicants whose medium of undergraduate instruction is not in English.

Graduation Requirements

The Master of Science (Building Performance and Sustainability) is a multi-disciplinary educational programme that can be completed in 1 year on a full-time basis, or in 2 years on a part-time basis.

Successful completion of the programme requires a candidate to pass 40 Modular Credits comprising 9 graduate level modules; or 7 graduate level modules and complete a dissertation. This includes an 8 MC studio module. The requirements for Prescribed Elective (PE) modules can be fulfilled by choosing any module(s) from the list of PE modules in the Master of Science (Building Performance and Sustainability) programme. There is also a provision to read up to a maximum of two Unrestricted Elective (UE) modules.

Period of Candidature

The graduation requirements of 40 modular credits (MCs) 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.

Syllabus

Essential Modules		Offered in	
BPS5101	Total Building Performance and Integration	Semester 1	
BPS5102	Climate Change and the Built Environment	Semester 2	
BPS5103	Green Building Integration and Evaluation Studio (8 MC Module)	Semesters 1 & 2	
Prescribed Elective Modules			
BPS5201	Thermal and Indoor Air Quality Performance	Semester 1	
BPS5202	Lighting and Acoustics Performance	Semester 1	
BPS5203	Structural Systems and Spatial Performance	Semester 1	
BPS5204	Energy Efficiency and Renewable Energy in Buildings	Semester 2	
BPS5205	Sustainable Construction and Maintainability	Semester 2	
BPS5207	Fire Technology	Semester 2	
BPS5300	Special Topics in Building Performance and Sustainability	Semesters 1 & 2	
Unrestricted Modules			

Modules from any masters programme or BPS5000 Dissertation.

4.2.2.7 Master of Science in Project Management

Programme Objectives

This programme aims to provide professionals with the sound management skills and techniques necessary for the successful completion of complex projects. The programme focuses on front-end general project management issues such as development, finance, contract, and dispute management. This is supplemented by allowing students to take elective modules from other faculties according to their professional specializations. The programme is taught by senior faculty members and industry experts. It attracts specialists from various sectors such as construction, engineering, and IT. Participants from overseas feature strongly on all intakes, and the wide mix of expertise allows for meaningful exchange and interaction at graduate level.

Entry Requirements

At least a bachelor's degree with honours in a relevant discipline.
Candidates should have at least two years of relevant practical experience after their first degrees.

Graduation Requirements

The graduation requirement is to pass 10 modules or 8 modules and a dissertation within a maximum period of four semesters for full-time candidates, and six semesters for part-time candidates. Part-time students will attend two to three evening classes per week per semester, and full-time students will attend four to five classes. Students may take three unrestricted elective modules from other faculties within NUS.

Period of candidature

The Master of Science (Project Management) programme can be completed in one year on a full-time basis, or in two years on a part-time basis.

Syllabus

Essential Modules		Offered in	
PM5101	Project Management	Semester 2	
PM5112	Research Methods	Semester 1	
PM5103	Contract Management	Semester 1	
		Prescribed Elective Modules (Choose four):	Offered In
PM5105	Development Finance	Semester 2	
PM5106	Design Management	Semester 1	
PM5107	Time and Cost Management	Semester 2	
PM5109	Project Management Law	Semester 2	
PM5111	Special Topics in Project Management	Semesters 1 & 2	
PM5113	Managing Projects using BIM^	Semester 1	
PM5114	Managing Complex Projects (pending approval)^	Semester 1	
PM5115	Project Finance Contract & Agreements(pending approval)^	Semester 2	
PM5116	Project Finance Case Studies(pending approval)^	Semesters 1 & 2	

UnrestrictedElective Modules		
Students can take any three approved master level modules within NUS (e.g. IT or engineering modules) or complete a dissertation and an unrestricted elective module.		

4.2.2.8   Master of Science in Real Estate

Programme Objectives

The programme curriculum provides an up-to-date programme that is grounded in academic rigour and relevant in its coverage of the industry's needs. The programme is designed to provide a strong foundation in strategic decisions within the real estate development process. The structure also allows sufficient flexibility for candidates to develop their interest in other specialised areas.

Entry Requirements

- At least a bachelor's degree with honours in a relevant discipline.
- Candidates should have at least two years of relevant practical experience.
- TOEFL/IELTS score is required for applicants whose medium of undergraduate instruction is not in English.

At the point of application, GRE scores are not compulsory. For all coursework programmes, additional requirements may be stipulated later, e.g. when prospective applicants come from universities whose academic standards are not known. These may include GRE scores.

Graduation Requirements

To graduate, a candidate must
- Pass five essential modules (20 MCs worth)
- Accumulate up to 20 MCs worth of elective modules (12 elective modules (of which two can be Cross Faculty Modules))
- Achieve a minimum Cumulative Average Point (CAP) of 3.00 which is equivalent to an average grade of B-;
- Not fail two or more modules in any semester for a full-time candidate or in any year of study for part-time candidates.

Period of Candidature

Candidates graduate after completing the 40 Modular Credit programme within a maximum period of four semesters for full-time candidates, and six semesters for part-time candidates. On average, the programme requirements can be completed in one year on a full-time basis, or in one and a half years on a part-time basis.

A full-day session, lasting one week, will be held at the beginning of Semester One of Year One. This is followed by evening classes, typically two to three times per week. Some elective modules may be offered on full-day sessions. The full-time programme is integrated with the part-time programme.

Recognition by Professional Bodies

The M.Sc. (Real Estate) degree is accredited by the Royal Institution of Chartered Surveyors, UK.

Syllabus

Essential Modules		Offered in	
RE5001	Real Estate Development (4 MCs)	Semester 1	
RE5003	Real Estate Investment (4 MCs)	Semester 1	
RE5004	Real Estate Economics (4 MCs)	Semester 1	
RE5005	Real Estate Finance (4 MCs)	Semester 2	
RE5013	Urban Policy & Real Estate Markets (4 MCs)	Semester 1	
Elective Modules			Offered In
RE5000	Dissertation (8 MCs)	Semesters 1 & 2	
RE5006	Portfolio and Asset Management (4 MCs)	Semester 2	
RE5009	Commercial Real Estate Appraisal (4 MCs)	Semester 1	
RE5010	Special Seminar (4 MCs)	Semester 2	
RE5011	International Field Study (8 MCs)	Semester 2	
RE5014	RE Investment Trusts & Property Funds (4 MCs)	Semester 1	
RE5015	Spatial Information Systems (SIS) for Urban Planning (4 MCs)	Semester 1	
RE5016	Real Estate Securitisation (4 MCs)	Semester 2	
RE5017	Real Estate Case Study (4 MCs)	Semester 2	
DEP5101A	Qualitative Methods for Urban Planning (4 MCs)	Semester 1	
DEP5103A	Quantitative Methods for Urban Planning (4 MCs)	Semester 2	
DEP5104	Urban and Regional Economics (4 MCs)	Semester 1	

4.2.2.9   Master of Business Administration with specialisation in Real Estate

Programme Objectives

The business of real estate requires a good understanding of how real estate assets and real estate markets behave in the context of increasing economic globalisation and financial integration. Using an interdisciplinary approach that combines domain real estate expertise and management skills, the M.B.A. with Specialisation in Real Estate programme aims to prepare real estate practitioners for creating new opportunities in the rapidly developing field of real estate. Offered jointly by the Department of Real Estate, School of Design and Environment and the NUS Business School, the programme is distinctive in applying the best of real estate and business techniques in a uniquely Asian setting.

Entry Requirements

A good bachelor's degree
A minimum of 2 years' full-time work experience in management or related functions
A good Graduate Management Admission Test (GMAT) score
A good score in the TOEFL, IELTS or PTE if English was not the medium of instruction in undergraduate studies.

Graduation Requirements

Both full-time and part-time students in the M.B.A. with Specialisation in Real Estate programme are required to complete 17 modules comprising:
• Eightcore business modules
• Four core real estate modules
• Two electives on real estate
• Oneand half electives on business
• One integrative field study project or one Business modules & twomodulesin lieu of the integrative project.

Essential Modules

The six core Business modules offered by the NUS Business School are:

- BMA5002 Analytics for Manager (4 MC)

- BMA5003 Financial Accounting (4 MC)

- BMA5005 Management Accounting (2 MC)

- BMA5008 Financial Management (4 MC)

- BMA5009 Marketing Management (4 MC)

- BMA5011 Macroeconomics (4 MC)

- BMA5013 Corporate Strategy (4 MC)

- BMA5801 Soft skills: Management Communication (No Credit) (0 MC)

Please visit the NUS Business School website: http://bschool.nus.edu.sg
for more details.

Syllabus

The four core Real Estate modules offered by the NUS Department of Real Estate are:

Essential Modules		Offered in	
RE5003	Real Estate Investment (4 MCs)	Semester 1	
RE5004	Real Estate Economics (4 MCs)	Semester 1	
RE5006	Portfolio and Asset Management (4 MCs)	Semester 2	
RE5016	Real Estate Securitisation (4 MCs)	Semester 2	

Elective Modules (not exhaustive)

Real Estate electives from the Master of Science in Real Estate programme are:

Elective Modules		Offered in	
RE5000	Dissertation (8 MCs)	Semesters 1 & 2	
RE5001	Real Estate Development (4 MCs)	Semester 1	
RE5005	Real Estate Finance (4 MCs)	Semester 2	
RE5009	Commercial Real Estate Appraisal (4 MCs)	Semester 1	
RE5010	Special Seminar (4 MCs)	Semester 2	
RE5011	International Field Study (8 MCs)	Semester 2	
RE5013	Urban Policy & Real Estate Markets (4 MCs)	Semester 1	
RE5014	RE Investment Trusts & Property Funds (4 MCs)	Semester 1	
RE5015	Spatial Information Systems (SIS) for Urban Planning (4 MCs)	Semester 1	
RE5017	Real Estate Case Study (4 MCs)	Semester 2	

Besides these, there is a wide selection of electives on campus to cater to the different needs, interests and career objectives of individual students.

RE5012 Integrative Field Study (12 MCs)

The Integrative Field Study is a hands-on consulting project that requires participants to apply the skills and knowledge gained during the course to solve real problems in organisations and come up with workable solutions. This module is typically offered from May to August every year and is jointly supervised by a faculty member and a participating firm.

You may also choose to read BM5109 Management Practicum and two electives in lieu of the integrative field study project.

Period of Candidature

The full-time M.B.A. programme is an intensive course which can be completed in 17 months. The part-time M.B.A. programme requires a minimum of 30 months to complete and can be extended to a maximum of six years.

4.2.2.10   Master of Urban Planning

The new programme is offered jointly by the Departments of Architecture and Real Estate.

Programme Objectives

The Master of Urban Planning(MUP) is a two-year multi-disciplinary programme that offers motivated individuals with all the necessary spatial design and intellectual skills to become urban planning professionals that will meet the challenges of a rapidly urbanising world. The programme builds on existing teaching content and research strengths of the Departments of Architecture and Real Estate, namely Spatial Design, Sustainability and Development Financing.

The programme seeks to produce graduates who, as individuals,are global citizens and responsible members of society, make ethical choices in matters of environment and society, and as well-rounded planning professionals, are equipped with urban planning and spatial design and communication skills to contribute to the development of sustainable cities and regions. In addition, they learn to be holistic in the analysis and understanding of complex underlying issues that impact cities and regions, focus on the physical planning and the spatial design of the overall structure or individual elements of the territory,and adopt an integrated approach in developing multi-disciplinary planning solutions.

Key Emphases of the Programme:

1. Integration of multi-disciplinary knowledge
    The synergy between disciplines and stakeholders, during the design process, can result in more holistic outcomes. On the studio-based projects where student teams solve problems together and, in the process, rethink disciplinary boundaries.

2. Focus on the Asian Context
    The programme, through the various taught modules, keep abreast of the latest global knowledge to develop innovative urban and regional planning solutions focused on Asian context of rapidly urbanizing and high density environments.

3. Exposed to Different Planning Skills
    The acquisition of spatial planning skills will equip graduates with the ability to 'zoom' between scales, using the design and planning tools that are appropriate to the different scales but without losing sight of the overall picture.

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 at least a bachelor's degree in a spatial design discipline (Architecture, Landscape Architecture, Urban Design, Urban Planning) or a related field of study (Urban Studies, Geography, Real Estate, Civil Engineering)
2. A detailed curriculum vitae and/or project portfolio.
3. TOEFL score of 92 (internet-based testing) or equivalent for applicants whose first degree is not taught in English.

Graduation requirements

The graduation requirement is 80 modular credits (MCs) and with a Cumulative Average Point (CAP) of at least 3.0. The 80 MCs are attained by completing the following:

- Four Essential Modules (Studio Projects) comprising 24 modular credits (MCs),

- Seven Essential Modules (Non-Studio) comprising 28 modular credits (MCs)

- Seven Elective Modules, selected from the multidisciplinary basket of approved modules, comprising 28 modular credits (MCs).

Period of Candidature

The MUP programme is designed to be completed in four semesters (two years) on a full-time basis.

Full-time candidates must complete the requirements of the programme within a maximum candidature period of six semesters (three years).

Syllabus

Essential Modules		Offered in	
Year 1 Semester 1		**20**	
DEP5101	Urban Analysis Workshop	4	
DEP5101A	Qualitative Methods for Urban Planning	4	
DEP5104	Urban and Regional Economics	4	
UD5521	Planning Process	4	
	Elective Module 1	4	
Year 1 Semester 2		**20**	
DEP5103	Urban Planning Studio	4	
DEP5103A	Quantitative Methods for Urban Planning	4	
DEP5102	Urban Planning History and Theory	4	
	Elective Module 2	4	
	Elective Module 3	4	
Year 2 Semester 1		**20**	
UD5601	Urban Design Studio	8	
DEP5105	Urban Infrastructure & Mobility Systems	4	
	Elective Module 4	4	
	Elective Module 5	4	
Year 2 Semester 2		**20**	
DEP5106	Integrated Urban Planning Studio	8	
ISD5105	Principles of Sustainable Development	4	
DEP5107	Planning Report **OR**	8	

	Elective Module 6 and Elective Module 7 (4 MC each)	
Total		80

Asian Master of Urbanism Certificate Programme

The AMU certificate is designed for students who are enrolled in the Master of Urban Planning Programme in NUS and its equivalent Master's degree programmes in Tongji University, Tsinghua University and The University of Tokyo. Students enrolled in the AMU programme may spend two semesters at the home university and up to two semesters at any two participating host universities. Modules taken at the overseas universities would be mapped to home university modules accordingly. Upon completion of all graduation requirements of the Certificate Programme, the AMU student will receive a certificate which is jointly signed by the representatives of all the partnering universities.

4.2.2.11   Master of Science in Integrated Sustainable Design

This programme is offered by the NUS School of Design and Environment, jointly managed by the Departments of Architecture and Building.

Programme Objectives

The MSc ISD is a unique one-year post-professional degree programme for individuals with an interest in the sustainable development of the built environment. The programme's past and current students include architects, engineers, landscape architects, urban planners, project managers and educators.

The programme offers insights, knowledge and skill-sets for a holistic approach to sustainability. The programme curriculum   has four areas of emphases:

- **The Asian Context** | The programme asks what it means to design and build for Asia. It inculcates a sensitivity to climate, socio-economic factors and environmental vulnerabilities that are particular to the region.

- **Buildings & Cities** | The programme's modules examine different scales at which the built environment is designed and operated. The first semester is devoted to the building scale; the second semester probes the urban scale. In bothcases, candidates are taught to understand the interdependency of buildings and urban networks.

- **Strategic Thinking** | Modules emphasise strategic and critical thinking over text-book learning. This is about asking the right questions at the start of the design-construction process.

- **Interactive, Integrative, Multidisciplinary** | Learning focuses on process: the how and why of decision making. It advocates synergy between disciplines and stakeholders, bridging knowledge and viewpoints.

Entry Requirements

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

1.   Evidence of a bachelor's degree with honours in Architecture, Engineering, Landscape Architecture, Planning/Urban Design, Project and Facility Management or other building-related degree programmes, or qualifications as may be approved by National University of Singapore's Senate.

2.   A detailed CV *and* project portfolio, the former describing at least two years of relevant practical experience and the latter illustrating this with projects in which the applicant has had an active role. The portfolio should be no larger than A4 format and it should highlight, in particular, the candidate's role in each project.
It is important that the CV and portfolio are used to illustrate the candidate's interest and experience in the subject of sustainability. This may include non-professional activities, where possible, for instance community and/or environmental activism, contributions to print or online publications, etc.

3.   Letters of reference from at least two persons who know the applicant well in an academic or professional

capacity.

4. An essay explaining in what way the question of sustainability is important to the candidate's home country/city/region, what s/he plans to do after graduation, and why, specifically, s/he has chosen MSc ISD. The essay should not exceed 2000 words.

5. TOEFL score of 580 or equivalent for applicants whose first degree is not taught in English.

Shortlisted candidates may be asked to appear for an interview. Where an applicant is not based in Singapore, the interview will take place via the internet.

Graduation requirements

The graduation requirement is 40 modular credits (MCs) and with a Cumulative Average Point (CAP) of at least 3.0. The 40 MCs can be attained by taking essential modules and two elective modules from existing master coursework programmes.

The programme is taught via six lecture modules and two studio projects.

Period of Candidature

The programme can be completed in one year (Students may join in Semester 1 or Semester 2), full time, or two years, part-time.

Syllabus

ESSENTIAL MODULES		MCs
Semester 1		20
ISD5101	Integrated Project Studio 1	8
ISD5103	Green Buildings in the Tropics	4
ISD5104	Energy and Ecology	4
	Programme Elective 1	4
Semester 2		20
ISD5102	Integrated Project Studio 2	8
ISD5105	Principles of Sustainable Urbanism	4
ISD5106	Sustainability Models and Blueprints	4
	Programme Elective 2	4
Total		40

4.2.2.12 Master of Science in Environmental Management

Programme Objectives

The M.Sc. (Environmental Management) programme is a multi-faculty programme of the University, hosted by the School of Design and Environment. The programme is taught by faculty members from the school, and six other faculties in the University. Faculty members from the following Faculties or schools in the University teach on it:

• School of Design and Environment

• Faculty of Arts and Social Sciences

- NUS Business School
- Faculty of Engineering
- Faculty of Law
- Yong Loo Lin School of Medicine (Dept of Community, Occupational and Family Medicine)
- Faculty of Science

The MEM programme has an MOU with the School of Forestry and Environmental Studies, Yale University, and one faculty member of the School teaches on the programme.

The objectives of the MEM programme are:
- to provide an internationally recognised graduate degree in environmental management for mid- and senior-level managers in the public and private sectors in Singapore and the Asia-Pacific;
- to equip graduates with the necessary knowledge to properly manage the environment and to deal with the challenges of an environmentally conscious society and international market; and
- to enable graduates to assume responsible and influential roles in the public and private sectors and to make sound decisions that support sustainable development.

Entry Requirements

- A good undergraduate degree with honours from a well-recognized university
- Relevant working experience in environmental management, or environment-related fields in either the public or private sectors.
- For applicants from universities whose academic standards are not widely known, additional requirements may be stipulated.
- These may include the Graduate Management Admission Test (GMAT) and/or the Graduate Record Examination (GRE).
- For candidates whose medium of undergraduate instruction is not in English, a good Test of English as a Foreign Language (TOEFL) score is also required.
- Applicants with undergraduate degrees (and graduate degrees, if any) from Myanmar are required to submit documentary evidence of their TOEFL or IELTS scores.

Graduation Requirements

The M.Sc. (Environmental Management) (MEM) Programme can be undertaken either full-time (one academic year) or part-time (two academic years). Candidates would be required to complete a 40 MCs programme, of which the main components are the following seven Core Modules.
To fulfil the requirements of the graduate coursework degrees programmes offered by the School of Design and Environment, a candidate must attain a minimum CAP of 3.0.

The candidature of a student will be terminated if he/she obtains the following:
1. a CAP of less than 2.50 for two consecutive semesters.
2. a CAP of less than 3.0 for three consecutive semesters.

In addition, each candidate must complete either one Elective module and a study report of 10,000 words, or a dissertation of 20,000 words. The candidate may choose the Elective from a wide range of modules related to the environment, offered by any of the faculties in NUS. Candidates are also required to attend a non-examinable seminar module, which covers, from an interdisciplinary perspective, global environmental issues and particular environmental challenges facing the Asian region. Speakers at these seminars are leaders in the specialised fields from the public and private sectors, as well as non-governmental organisations, both local and international.

Period of Candidature

Full-time candidates must complete the requirements of the programme within a maximum candidature period of four

semesters (two years), and part-time candidates, a maximum period of six semesters (three years).

Syllabus

Essential Modules		Offered in	
BX5101	Business and the Environment	Semester 2	
BL5102	Environmental Science	Semester 1	
LX5103	Environmental Law	Semester 1	
ESE5901	Environmental Technology	Semester 2	
PP5414	Foundations of Sustainable Development and Environmental Economics	Semester2	
DE5106	Environmental Management and Assessment	Semester 1	
DE5107	Environmental Planning	Semester 2	

Conduct of Classes

Most of the classes are held in the School of Design and Environment. Most classes are held in the evenings, from 6.30 pm to 9.30 pm, with the exception of Elective Modules which may be held in the other Faculties or schools during other periods of the day.

Part-time candidates generally would be expected to attend two three-hour evening classes per week in each semester. Full-time candidates would attend, on average, four three-hour evening classes per week.

The modules are delivered in the form of interactive lectures, seminars, workshops and case studies. Field trips are arranged regularly, usually on Saturdays.

Under the compulsory Seminar Programme, seminars are held at regular intervals, usually on Friday evenings. Some intensive short courses, such as the one on Environmental Ethics, are occasionally held on Saturday mornings.

4.2.3   Financial Assistance and Scholarships

4.2.3.1   K H Tan Bursary - Master of Architecture

The K H Tan Bursary is donated by Mr Tan Kwang Hwee to support financially needy full-time Master of Architecture final year students at the Department of Architecture. 5 bursaries, each valued at $7,000, will be awarded to deserving students in AY2012/13. The bursary is tenable for one year. Existing full-time M.Arch. students or full-time students embarking on the Master of Architecture final year programme are eligible to apply for the bursary and there are no constraints on the applicants' nationality, race or gender.

4.2.3.2   NUSS MEM Scholarship – Master of Science (Environmental Management)

The National University of Singapore Society (NUSS) MEM Scholarship was established to encourage studies in environmental management and to assist impassioned students of the M.Sc.(Environmental Management) (MEM) who are in financial need. The goal is to facilitate and allow worthy participation in this Masters programme.

4.2.3.3   Shell Bursary – Master of Science (Environmental Management)

The Shell Bursaries are granted to full-time students of the M.Sc. (Environmental Management) programme who are in need of financial support. Such students must have completed one semester of study on the programme, and must have

achieved creditable academic standards.

4.2.3.4　Shell Best Dissertation Award - Master of Science (Environmental Management)

The Shell Best Dissertation Prize is awarded annually to the student of the M.Sc. (Environmental Management) programme who has written the best dissertation in the graduating cohort of that year. The award is made on the basis of the final marks obtained, the difficulty of the topic chosen and the value of the research outcome. A number of the top candidates for each cohort are required to make presentations on their dissertations to a committee to determine the award.

4.2.3.5　Tan Chay Bing Bursary - Master of Science (Environmental Management)

The Tan Chay Bing Bursaries are granted to full-time students of the M.Sc. (Environmental Management) programme who are in need of financial support.

4.2.3.6　The Asian Development Bank-Japan Scholarship - Master of Science (Environmental Management)

The Asian Development Bank (ADB)-Japan Scholarship Programme was established in 1988. It aims to provide an opportunity for well-qualified citizens of ADB's developing member countries to pursue graduate studies in economics, management, science and technology, and other development-related fields at participating academic institutions in the Asia and Pacific Region. Upon completion of study, scholars are expected to contribute to the economics and social development of their home countries.

4.3　Academic Awards

Medals and book prizes are awarded only once in the academic year, after the Semester 2 Examination. In all instances, a prize-winner must be of sufficient merit. He/She must have passed all modules attempted and must be a good overall student. No award will be made unless there is a candidate of sufficient merit.

Below is a full list of the medals and prizes for SDE students :

Department	Name of Award	Course / Year of Student	Award Criteria
Department of Architecture	Lee Kuan Yew Gold Medal	M.Arch. (Concurrent BA(Arch) Hons&M.Arch.)	Best graduate student throughout the course of study for Master of Architecture (Concurrent B.A.(Arch.) Honors and M.Arch. Degree programme.
	Singapore Institute of Architects Prize	M.A.(UD)	Best student throughout course of study
	Singapore Institute of Architects Medal	M.Arch.	Best graduate student in the course of study for Master of Architecture and has passed the Master of Architecture II examinations.
	Board of Architects Prize and Medal	M.Arch.	Best graduate student in Master of Architecture examination.
	Aedas Medal & Prize in Architectural Design Thesis	M.Arch.	Best graduate student in the Master of Architecture who has obtained the highest mark for AR5103 Architectural Design Thesis
	Aedas Medal & Prize in Sustainable Design	M.Arch. (DTS Specialization)	Best graduate student in the Master of Architecture (speicalisation in DTM) who has obtained the highest mark for AR5104 Final Design Project.

	P & T Medal & Prize	M.Arch.	Best graduate student in the Master of Architecture programme who has obtained the highest average mark for AR5421 (Architectural Practice 1) and AR5422 (Architectural Practice 2).
	Pioneer Architects (Lim Chong Keat) Prize	M.Arch.	Awarded to the Master of Architecture student whose final year design thesis display strong and discernible 'pioneering' spirit that is environmentally, economically and socially sustainable.
	Lee Kip Lin Medal and Prize for Best Graduating Dissertation in History and Theory of Architecture	M.Arch	M.Arch graduating student attaining the highest mark in AR5141 Dissertation and Dissertation is in the area of History and Theory of Architecture
Department of Building	MSc (Building Performance and Sustainability) Medal	M.Sc. (BPS) w.e.f S2 AY2011-12	Highest CAP throughout the course of study for Master of Science (Building Performance and Sustainability)
	SISV Gold Medal	M.Sc.(Project Mgt)	Highest CAP throughout the course of study for Master of Science (Project Management)
Department of Real Estate	REDAS Gold Medal	M.Sc.(RE)	Best graduate student in the course of study for M.Sc. (Real Estate).
Master of Sc (Environmental Management)	Shell Medal and Prize	MEM	Highest CAP throughout the course of study.
	Shell Best Dissertation Award	MEM	Best graduate student who has obtained the highest mark for DE5109 Dissertation module