



**NANYANG
TECHNOLOGICAL
UNIVERSITY**



NTU Summer Programme 2013

**"Sustainability and Innovation"
8 – 19 July 2013, Singapore**

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Nanyang Technological University, Singapore

The Centre for Continuing Education of Nanyang Technological University (NTU) is organizing a two-week summer programme from 8 to 19 July 2013 for international undergraduates.

The theme of the programme is “Sustainability and Innovation”. You will get to learn about Climate Change and its impact on Sustainability, Sustainable Urban planning and Management, Economic Sustainability, Sustainability Leadership, Creativity & Innovation, and Entrepreneurship & Innovation: When East meets West.

Lessons come alive with the various interesting visits planned specially for you.

Join in the programme! Be the first to learn how to be sustainable and innovative in the 21st Century!

Come and experience a uniquely learning environment on the green, spacious and beautiful campus of NTU. Truly enjoy the exciting life in a vibrant and cosmopolitan city!



IMPORTANT DATES

Early bird registration Deadline	22 April 2013
Registration & Payment Deadline	27 May 2013
Confirmation of Registration	31 May 2013



Programme Outline

- ✓ Classes are conducted in English by NTU faculty members and adjunct trainers

Topics include:

- Singapore, the Island Nation – An Overview
- Climate Change and Its Impact on Sustainability
- Sustainable Urban Planning and Management
- Can we achieve sustainable development?: An Economic Perspective
- Sustainability Leadership
- Creativity and Innovation
- Economic Sustainability
- Entrepreneurship and Innovation: When East meets West

- ✓ Field trips include visit to:

- NeWater Plant
- Marina Barrage
- Urban Redevelopment Authority Gallery
- Merlion Park
- Marina Bay
- Singapore River
- Chinatown
- Little India
- Night Safari
- Gardens by the Bay

- ✓ Discussion
- ✓ Group Presentation
- ✓ Sports Activities
- ✓ Activities with students



Programme Schedule

DATE	AM	PM
Sunday 7 July		Check-in to NTU Student Hostel (12 noon – 8pm) 
Monday 8 July	9.00am – 10.00am Welcome Session & Programme Briefing 10.15am – 12.15pm Class Singapore, the Island Nation – An Overview	12.30pm – 1.30pm Welcome Lunch 2.00pm – 5.00pm Campus & Neighbourhood tour 
Tuesday 9 July	9.00am – 11.30am Class Climate Change and Its impact on Sustainability	2.00pm – 5.30pm City Tour – Little India, Singapore River, Merlion Park, Marina Bay 
Wednesday 10 July	9.00am – 11.30am Class Sustainable Urban Planning and Management	2.00pm – 5.30pm Visit NeWater Plant & Marina Barrage 

<p>Thursday 11 July</p>	<p>9.00am – 11.30am Class Can we achieve sustainable development?: An Economic Perspective”</p>	<p>2.00pm – 5.30pm Visit Urban Redevelopment Authority Gallery & Chinatown</p> 
<p>Friday 12 July</p>	<p>9.00am – 12 noon Class Sustainability Leadership</p>	<p>2.00pm – 4.30pm Student Activities</p>
<p>Saturday 13 July</p>	<p>Free</p>	
<p>Sunday 14 July</p>	<p>Free</p>	
<p>Monday 15 July</p>	<p>9.00am – 11.30 am Class Economic Sustainability</p>	<p>1.00pm – 3.00pm Class Discussion on Sustainability</p> <p>6.00pm – 10pm Visit Night Safari</p> 
<p>Tuesday 16 July</p>	<p>9.00am – 12.00noon Class Entrepreneurship and Innovation: When East meets West I</p>	<p>1.00pm – 3.00pm Class Entrepreneurship and Innovation: When East meets West II</p> <p>3.45pm – 5.45pm Sports Activities</p> 

<p>Wednesday 17 July</p>	<p>9.00am – 11.30am Class Creativity and Innovation I</p>	<p>1.30pm – 5.30pm Visit Gardens by the Bay</p> 
<p>Thursday 18 July</p>	<p>9.00am – 11.30am Class Creativity and Innovation II</p>	<p>Self-Study</p>
<p>Friday 19 July</p>	<p>9.00am – 11.30am Group Presentation</p> <p>11.45am – 12.30pm Certificate Presentation Ceremony</p>	<p>12.45am – 2.00pm Farewell Lunch</p>
<p>Saturday 20 July</p>	<p>11am Check-out</p>	

* Programme is subject to change.

Course Synopsis

Singapore, the Island Nation: An Overview

Speaker: Dr. Chan Soon Keng

1. Brief Introduction: history and geography
2. The Peoples of Singapore
3. Culture and Subcultures
4. Educational System
5. Housing
6. Transportation
7. Economy
8. Summary

Climate Change and its impact on Sustainability

Speaker: Dr Adam D. Switzer

This session will discuss natural hazards and their impact on sustainability and development of the coasts in Asia, and will answer the question “Why is Asia particularly vulnerable to climate change?”

Sustainable Urban Planning and Management

Speaker: Dr Robert Tiong

Singapore is a cosmopolitan city with a long-term vision and mission in its Concept and Master Plans for its land-use developments. Its urban development and town planning as well as public housing systems have proven its success in this land-scarce island.

The Urban Redevelopment Authority has won numerous awards for its successes in transforming Singapore into a modern metropolis hub for international businesses, an attractive urban environment for residential dwelling in the city, as well as an enviable tourist destination. Planned, developed and managed by the Housing Development Board (HDB), a statutory board under the Ministry of National Development, its public housing has accommodated more than 80% of the country's population with a 95% ownership of what commonly known as HDB Flats in each of HDB towns. This successful urban development and town planning programs and the public housing system have not only catered for the living need but also catered the social, racial, economical and national development need for the whole nation. Singapore has also achieved much in building up eco-friendly, sustainable and energy-efficient practices and standards in its urban development and town planning programs.

This session would provide a platform for participants to gain a comprehensive understanding on the Singapore urban development and town planning, as well as the principles of land use planning, public housing management systems and the mechanisms on how to successfully develop comprehensive programs.

The aim will include learning of successful experiences of Singapore urban development and town planning as well as the public housing system and the supporting private

residential and commercial sectors. Participants will study and discuss the government function, land strategy, town planning, financing, integration of commercial development, public transport and housing, sustainability of public housing and project management.

Can we achieve sustainable development? :

An Economic Perspective

Speaker: Dr Youngho Chang

Sustainable development (SD) is a path that ensures the well-being of inter-generation as well as intra-generation. There are two different concepts of SD, namely, ecological and economic. This seminar presents the economic perspective of SD and contrasts it with the ecological perspective by different theoretical models and the assumptions that they entail.

The so-called SD indicators such as Environmental Sustainability Index (ESI) and Genuine Savings (GS) show how different approaches will lead to very stark results in SD. It also questions how SD is relevant to Singapore – a small island who seems to have inconsequential ecological impacts. Some relevant examples might answer this question. Countries or regions like Nauru, Easter Island and Aral Sea constitute the negative examples of SD, while a city like Dubai could present the positive example of SD.

Lastly, it offers a new form of SD indicator to reconcile the different approaches in SD. This new indicator contains elements from both economics and ecology. It is expected that the new indicator provides a greater understanding on various disciplines to achieve SD.

Sustainability Leadership

Speaker: Ms Quek, Eliza

This session will explore the rationale, need, values and competencies needed for leaders to demonstrate sustainability.

At the end of the session, participants will be able to :

- Define Sustainable Leadership, differentiate it from other Leadership models
- Map the values, competencies, need and rationale for Sustainable Leadership
- Be inspired through reviewing examples of current issues and challenges facing the world population to demonstrate Sustainable Leadership mind-set
- Develop strategies to advocate and role model Sustainable Leadership

Outline

- Experiential exercise: What are the challenges and issues facing the world and us in the 21st century?
- Why Sustainable Leadership matters, what it is?
- How is SL differentiated from other Leadership models?
- Exploring values and competencies
- Sustainability Leadership begins with ME - what I can do differently to advocate and demonstrate Sustainability leadership.
- Action planning to overcome obstacles to change.

Economic Sustainability

Speaker: Dr Sng Hui Ying

The five basic needs of all citizens are: employment (E), housing (H), healthcare (H), education for their children (E) and adequate retirement financing (R). However, the provision of these five basic needs (EHHER) by governments has led to persistent budget deficits, mounting public debts and worsening international competitiveness in many developed and developing countries. Greece is one such example. This is clearly economically unsustainable.

In the case of Singapore, our unique institutional arrangements and constitutional fiscal handcuffs has help to ensure that the five basic needs can be met without government running a budget deficit. The purpose of this session is thus to explore and understand the Singapore's brand of fiscal sustainability.

Creativity and Innovation

Speaker: Associate Professor Stephen Lee

In today's fast-paced, constantly evolving world, the three R's of education – Reading, wRiting and aRithmetic – are inadequate to prepare youngsters for the future. They need to be educated in cReativity as well.

This short session introduces participants to the notion of creativity and its characteristics, what fosters and what hinders creativity, the difference between, "invention" and "innovation"; examples of innovators and innovations that have changed the lives of many.

Entrepreneurship and Innovation:

When East meets West

Speaker: Mr Francis Tay

Entrepreneurship and innovation goes hand in hand like a horse and carriage. However, the road to being an entrepreneur is not an easy one. Besides having the right characteristics, the necessary environment must also be there to encourage individuals to become entrepreneurs. Innovation, just like entrepreneurship, is not something that can be simply turned on when called upon. Innovation begins with a process that calls for

individuals to be creative. Creativity however, is not necessarily something innate in all individuals. Research in the area of entrepreneurship indicates that entrepreneurs are not born and can be made. Entrepreneurs essentially start businesses to take advantage of opportunities and innovate in order to continue being successful. Thus, the potential for anyone to be an entrepreneur is there, however, only a few will take this route as a career. Why is this so? Can we train someone to be innovative? Can we turn the man on the street into an entrepreneur?

This session will look at the characteristics of an entrepreneur and the reasons why one would choose to be an entrepreneur. This session will also look at innovation from an "East vs West" perspective, e.g. how could would be entrepreneurs find innovative ideas from trends observed in the West and vice-versa in the East? For example, how can we see opportunities from demographic, technological and economic changes? How can a small country like Singapore potentially be the centre for innovation?

Registration Fee

Category	Early-bird Registration (Payment made by 22 April 2013)	Standard Registration (Payment made after 22 April 2013 but before 27 May 2013)
Students from NTU partner universities Or Group Registration of at least 3 pax	SGD 2,200 + 7% Good & Services Tax =SGD 2,354	SGD 2,400 + 7% Good & Services Tax =SGD 2,568
Students from Non-NTU partner universities	SGD 2,500 + 7% Good & Services Tax =SGD 2,675	SGD 2,700 + 7% Good & Services Tax =SGD 2,889

The registration fee covers 13-night twin-sharing student hostel accommodation (air-conditioned), tuition fee, field trips, programme materials, welcome lunch and closing lunch. Each participant will be issued an official receipt from NTU.

The fee does not include airfare, insurance, meals, visa application, personal expenses or any expense not stated above.

Registration

All international undergraduates are eligible to apply for the programme but must possess a good command of English language as the programme will be conducted in English.

Please submit your application form either by email to cce@ntu.edu.sg or via fax to (+65) 6774 2911.

You are required to submit a letter from your university verifying your student status or send us a scanned copy of your student card.

You will receive an email acknowledgement within 2 working days from your registration. If you do not receive any acknowledgement from us, please send an email to cce@ntu.edu.sg.

The early bird registration & payment deadline is 22 April 2013. The standard registration & payment deadline is 27 May 2013. If you wish to register after the deadline, please send an email to cce@ntu.edu.sg to check if vacancy is still available.

The programme may be cancelled if there are insufficient participants and full refund will be made.

You will be notified on the final confirmation of your registration and the status of the programme by 31 May 2013.

Modes of Payment

You may pay by one of the following payment modes:

a) Bank Draft

Bank draft in Singapore dollars is to be made payable to "Nanyang Technological University".

A copy of the registration form must be attached with the bank draft which has to be sent by registered mail or by courier to the following address

Nanyang Technological University
Centre for Continuing Education
11 Slim Barracks Rise (off North Buona Vista Road)
NTU@one-north campus, Executive Centre #05-01
Singapore 138664
Attention: NTU Summer Programme 2013

b) Telegraphic Transfer

Payment to be transferred to NTU bank account as stated below:

Beneficiary's Name	Nanyang Technological University
Beneficiary's Banker Name	Overseas-Chinese Banking Corporation Limited
Beneficiary's Banker Address	NTU Branch Nanyang Technological University Academic Complex North Spine NS3 01-01 50 Nanyang Avenue, Singapore 639798
Beneficiary's Account Number	537-010027-001
SWIFT Code	OCBCSGSG

*Please note that you have to bear all the bank charges incurred in your home country and Singapore. You are also requested to state in the telegraphic transfer slip that the payment is for "NTU Summer Programme 2013".

A copy of the telegraphic transfer slip has to be faxed to +65-6774 2911 or you may email a scanned copy to cce@ntu.edu.sg.

Certificate

NTU will award a Certification of Participation to participants who achieved at least 75% attendance.

Academic credits will not be awarded by NTU but home universities may consider awarding credit to their own students.

Insurance

You are required to purchase travel insurance to cover your stay in Singapore. Proof of purchase of travel insurance must be submitted to NTU prior to your arrival. You will not be able to participate in the programme if you do not comply with this requirement

Accommodation

Twin-sharing student hostel accommodation (air-conditioned) will be provided at NTU main campus during the programme period.

Check-in : 7 July 2013 (Sunday), 12 noon to 8pm

Check-out : 20 July 2013 (Saturday), 11am

Remarks:

* No extension of stay in the hostel is allowed and you have to adhere strictly to the check-in/check-out timing. Please arrange your own accommodation outside campus if you wish to arrive early or extend your stay in Singapore.

* A CASH deposit of SGD 100 or authorization to charge to a credit card is required upon checking in. The deposit will be fully refunded upon checking-out if there are no damages to the hostel room.



Introduction of NTU

Nanyang Technological University (NTU) is a research-intensive university with globally acknowledged strengths in science and engineering. The university has roots that go back to 1955 when Nanyang University was set up. Today, NTU has four colleges with 12 schools, and four autonomous entities, the National Institute of Education, the S Rajaratnam School of International Studies, the Earth Observatory of Singapore, and the Singapore Centre on Environmental Life Sciences Engineering.

NTU provides a high-quality global education to more than 33,500 undergraduate and postgraduate students. The student body includes top scholars and international olympiad medallists from the region and beyond.

Hailing from more than 66 countries, the university's 3,600-strong teaching and research staff bring dynamic international perspectives and years of solid industry experience.

Diverse disciplines for diverse talents

NTU is ranked 47th in the world, according to the QS World University Rankings 2012. This places it in the top 1% of universities globally. In October 2012, NTU is ranked top 100 in the Times Higher Education World University Rankings list.

The College of Engineering, the world's largest engineering college, has six schools focused on technology and innovation and a research output among the top four in the world.

The College of Science, with award-winning faculty and world-class laboratories, runs Singapore's only direct honours bachelor's degree programmes in the biological, physical and mathematical sciences.

The Nanyang Business School is ranked first in Asia in accountancy research and is consistently ranked as one of the best Asian business schools. It is also one of only three in Asia to be awarded both the EQUIS (European Quality Improvement System) and AACSB (Association to Advance Collegiate Schools of Business) accreditations - international hallmarks of quality.

The College of Humanities, Arts, & Social Sciences is home to the Wee Kim Wee School of Communication and Information, a top journalism and media school in Asia; a fast-growing humanities and social sciences school with niches of excellence; and Singapore's first professional art school offering degree courses in art, design and interactive digital media.

The National Institute of Education, Singapore's main teacher-training institute, is internationally-acclaimed and provides educational consultancy to countries from Abu Dhabi to Vietnam.

The S Rajaratnam School of International Studies (RSIS), an autonomous graduate institution of NTU, runs the Institute of Defence and Strategic Studies, long recognised as a world authority on strategic studies and security research. RSIS was ranked second among university-affiliated think tanks in Asia in the 2011 Global Go-To Think Tank Rankings.

The Earth Observatory of Singapore, established in 2008 with S\$150 m in state funding, is dedicated to hazards-related earth science.

The Singapore Centre on Environmental Life Sciences Engineering seeks to become a world leader in research on microbialms, with the goal of finding new solutions in water and environmental sustainability.

Well-rounded, global education; tailored programmes for high-achievers

The university's academic and research programmes, with real-world relevance, have reaped dividends in the form of strong support from major corporations and industry leaders, in terms of both research funding and partnerships and global internship opportunities for our students.

NTU's Undergraduate Experience, offering a broad education in diverse disciplines, including residential living and international experience, has also received external endorsement for its holistic curriculum featuring a rich selection of majors and minors.

At NTU, academically-inclined students with a yen for research can take part in the Undergraduate Research Experience on Campus programme. High-calibre students with a deep passion for science and technology also have the option to pursue the CN Yang Scholars Programme, a premier undergraduate programme that prepares science and engineering talents for top graduate schools as well as greater feats in the 21st century.

NTU has five distinct programmes that allow students to study, do research and work overseas. Among these are the Global Immersion Programme, with four different work/study/research options with leading companies and partner-universities in Asia, Europe and North America. Currently, 43% of undergraduates enjoy overseas exposure, which helps them acquire a global mindset.

Tech-savvy and adaptable, graduates of the university are sought-after and well-paid, drawing some of the highest starting salaries among local university graduates.

Distinctive edge in science and engineering; Nobel boost

As the main science and technology university in Singapore, NTU has made substantial contributions to Singapore's drive for research and innovation spearheaded by the National Research Foundation (NRF), particularly in the high-investment areas of

biomedical sciences, environmental and water technologies, and interactive and digital media.

In February 2010, NTU was globally ranked 8th out of 1,084 institutions that had attracted the highest total citations to their papers published in Thomson Reuters-indexed engineering journals, with 5,912 papers cited a total of 28,516 times.

Increasingly, NTU has been winning the lion's share of Singapore's competitive research funds. Since 2007, NTU has garnered S\$130m from the NRF's Competitive Research Programme alone – the highest proportion of such grants awarded to a particular institution. Last year, NTU won three out of the five inaugural Environment & Technology Research Programme grants given out by Singapore's National Environment Agency. In interactive digital media (IDM), NTU clinched 10 out of 13 grants awarded in the NRF-IDM July 2008 Grant Call. The university has also won a total of S\$270m in government funding for its two Research Centres of Excellence – the Earth Observatory of Singapore and the new Singapore Centre on Life Sciences Engineering.

A key node in NTU's pursuit of research excellence is the endowed Institute of Advanced Studies, focused on promoting science and technology at the highest level. The institute has attracted 10 Nobel laureates and a Fields Medallist to its panel of International Advisors, and regularly flies in Nobel laureates and other scientific giants to enrich the life and work of the university community.

A university for the world

NTU's global reputation attracts faculty, students and partnerships from Asia, North America, Europe and beyond.

Working with local and global organisations, NTU actively explores cross-disciplinary solutions for the future. Among its academic partners are the Massachusetts Institute of Technology, Stanford University, Cornell University and Carnegie Mellon University in the US; Cambridge University and Technische Universität München in Europe; and Peking University and Waseda University in Asia. NTU works with many global industry and research leaders, and has developed joint laboratories with Thales, Rolls-Royce, Fraunhofer-Gesellschaft, Robert Bosch and Toray Industries Inc.

In 2009, NTU led the formation of the Global Alliance of Technological Universities, comprising seven top universities tackling societal issues through leading-edge science and technology. The alliance harnesses the strengths of its members – the California Institute of Technology, Eidgenössische Technische Hochschule Zürich, Georgia Institute of Technology, Imperial College London, Indian Institute of Technology Bombay, NTU and Shanghai Jiao Tong University. NTU also contributes to the global academic enterprise as a member of the ASEAN University Network, Association of Commonwealth Universities, Association of Southeast Asian Institutions of Higher Learning and World Educational Research Association.

A rich heritage: national monuments on campus

Gazetted as a national monument in 1998 and now housing the Chinese Heritage Centre, the beautifully restored former Nanyang University Administration Building, with a distinct oriental character, overlooks the historical Yunnan Garden. The Nanyang University Memorial and original Nanyang University Arch were also declared national monuments of Singapore in 1998. The NTU Art & Heritage Museum is an approved public museum under the National Heritage Board's Approved Museum Scheme; benefactors who donate artworks and artefacts to NTU enjoy double tax deductions.



NTU- Centre for Continuing Education

The Centre for Continuing Education (CCE) of Nanyang Technological University (NTU) was set up in July 1991. It acts as a link between NTU and the community by providing continuing education for our alumni and others who are keen to advance their knowledge and learn practical skills.

To sharpen your competitive edge and maximise your potential, you need to talk to the expert in professional development and executive training - Nanyang Technological University's Centre for Continuing Education (NTU-CCE).

With our innovative and practical training programmes, you will embark on a journey to explore new frontiers and sharpen your mind. From engineering to management disciplines, we design programmes that realise your talent and challenge your thinking. We create unique opportunities for growth and transformation.

Since 1991, we have trained tens of thousands of leaders and professionals and continue to strengthen our position as a leading professional development training provider in Singapore and the region.

Our Mission

Our mission is to create opportunities for growth and transformation for the professionals, organisations and the communities we work with, by imparting knowledge and skills through innovative and value-enhancing education programmes and services.

Our Vision

We aim to be a leading provider of continuing education programmes and services in Asia.

Our PRIDE - Your Choice

Come and experience our professional training and services:

Professional Development Courses

Regional Executive Programmes

International Corporate Training

Distance Learning

Event Management

