

GEM Trailblazer Summer **Course Descriptions 2023**



Summer Tracks 2023

Track 1 Language & Cultural Studies

Track 2 Entrepreneurship & Innovation

Track 3 Creative Design & Media

Track 4 Success in the Globalised Marketplace

Track 5 New Technologies, New World



Summer Tracks 2023

Track 1 Language & Cultural Studies

This track will introduce students to basic Chinese and Malay language skills, letting students discover the fascinating and intriguing lifestyles in Asia.

Track 2 Entrepreneurship & Innovation

Offered by the Nanyang Technopreneurship Centre (NTC), this track is designed to equip students with fundamental entrepreneurship competencies, business acumen and stamina to build and grow businesses. Consisting of two courses, it will cover topics such as entrepreneurship; creativity; writing business plans; business accounting; intellectual property; marketing strategy; risk evaluation; financial projection; securing finances; and managing team members.



Track 3

Creative Design & Media

Through this series, it encourages students to come up with original creative works and design. Students will be able to explore various genres and find their voice through various writing, editing, painting and new media productions.

Track 4

Success in the Globalised Marketplace

To compete in today's marketplace, one has to possess many traits and skills from cultural intelligence to negotiation skills, strategic management and marketing communications. Students will have a range of business and humanities courses to choose from this track.


Track 5

New Technologies, New World

Get tech-savvy with this track; students will be able to dip into the world of 3D printing, bioprinting and their applications in the real world; with exciting courses on artificial intelligence and data mining being added recently.



Track 1 Language & Cultural Studies

Course	Teaching Dates	No. of Academic Units	Name of Instructor
LM5001 Malay Language	3 July to 28 July 2023	3	 Hani Mustafa



Description

The course presents an introduction to Malay language through the learning of basic grammar and essential vocabulary to enable students to understand and communicate in simple Malay.

This course aims to provide students with competence in understanding and using basic Malay. In order to familiarize students with the target language, the requisite skills of listening, speaking, reading and writing will be taught, along with the rudiments of grammar. These are achieved through thematic and scenario-based learning which will equip students with the necessary vocabulary based on the prescribed themes.



Track 1 Language & Cultural Studies

Course	Teaching Dates	No. of Academic Units	Name of Instructor
CF5001 Chinese Language and Cultural Studies	3 July to 28 July 2023	3	 Joanne Yi  Dr Neo Peng Fu

Description

The course is suitable for non-native learners who have little or no knowledge of the language. Learners will gain an insight into the language and culture. The Chinese Language and Cultural Studies course consists of two parts:


- Part 1: Chinese Language Study
- Part 2: Chinese Cultural Studies

The language segment of the course covers Chinese Phonetics and simple oral communication skills to meet daily conversation needs, such as greetings, asking questions, living, working, self-introductions, etc.

The cultural appreciation segment focuses on the history and culture of the Chinese communities in Southeast Asia. It helps learners to gain insight on Southeast Asians of Chinese descent, whom might very possibly interact with on a daily basis when venturing in Singapore in particular, and in the region in general.



Track 2 Entrepreneurship & Innovation


Course	Teaching Dates	No. of Academic Units	Name of Instructor
ET5131 Venturing Into Entrepreneurship	3 July to 28 July 2023	3	 Jason Ho

Description

This course aims to provide you with a fundamental understanding of the entrepreneurial process, of how entrepreneurs start and implement their business ideas and to instill in them an entrepreneurial mindset posture for the future. By immersing in activities relevant to entrepreneurship and value creation, you will discover and acquire one's entrepreneurial passion, motivation, and mindset. You will be introduced to the concepts of entrepreneurship, innovation, and new venture creation process. You, individually and collectively as a team, will learn to generate ideas, identify opportunities, and investigate whether an idea can be turned into a viable business through a feasibility analysis.



Track 2 Entrepreneurship & Innovation


Course	Teaching Dates	No. of Academic Units	Name of Instructor
ET5132 New Venture Financing	3 July to 28 July 2023	3	 Kenneth Chiam

Description

This course aims to provide you an understanding of the start-up formation process, in particular, common legal and regulatory requirements, types of business structures, securing capital for starting up and growth, ultimately leading to a viable exit strategy for all stakeholders. You will be able to understand the entrepreneurship development from a financing viewpoint. At the same time, you will gain insights on the investment perspectives from both the entrepreneurs and investors with respect to the funding cycles and expectations. You will also learn how to assess a venture's financial health through understanding the financial statements, essential financial indicators, capital budgeting techniques and valuation methods.




Track 3 Creative Design & Media

Course	Teaching Dates	No. of Academic Units	Name of Instructor
AAA18J Painting with Watercolors	3 July to 28 July 2023	3	 David Chan
Description			
<p>This course aims to highlight the beauty and ephemeral qualities of watercolour painting. You will be progressively taught various techniques to achieve different results. There will be an emphasis on hands-on practice as well as keynotes on how to appreciate the visual qualities of watercolour paintings. You first be taught basic drawing and paintings skills, after which you are encouraged to take a more experimental and gestural approach to watercolour painting. At the end of the course you should be able to discern and answer the question – “what makes a good watercolour painting?”</p>			



Track 3 Creative Design & Media

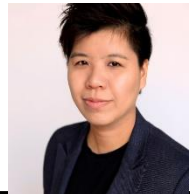
Course	Teaching Dates	No. of Academic Units	Name of Instructor
AAA28C Digital Media and Visual Arts: Still Imaging	3 July to 28 July 2023	3	 Lee Siew Weng

Description


This studio course introduces contemporary digital photography through the experience of technical, expressive and conceptual methods of digital image making. You will be exposed to camera handling techniques, composition skills, studio photography and experimental imaging. You will acquire working methods, visual research skills and knowledge necessary for the successful implementation of meaningful and aesthetic lens-based artwork.



Track 3 Creative Design & Media


Course	Teaching Dates	No. of Academic Units	Name of Instructor
AAA18E Drawing	3 July to 28 July 2023	3	 Tricia Goh
Description			
<p>This course investigates the nature of drawing from the perceptual domain, using drawing as a vehicle for visual inquiry to record from observation. This course is for anyone who cannot draw but would like to learn, and will equip you with the skills to draw anything you see.</p>			

Track 3 Creative Design & Media

Course	Teaching Dates	No. of Academic Units	Name of Instructor
AAA18K Communication Design	3 July to 28 July 2023	3	 Ng Yong Yi
Description			
<p>This studio course introduces you to learn about communicating ideas or information through arrangement of visual elements within a 2D through the use of space, type and image. You will acquire basic graphic design skills and realise impactful and meaningful 2D design works.</p>			



Track 4 Success in the Globalised Marketplace

Course	Teaching Dates	No. of Academic Units	Name of Instructor
BU5641 Cultural Intelligence: How to be an Explorer of the World	3 July to 28 July 2023	3	 Dr Hoo Hui Teng


Description

Cultural intelligence, CQ is the capability to function effectively in culturally diverse situations (Earley and Ang, 2003). IQ and EQ are no longer enough, and CQ is becoming a critical predictor for success in today's increasingly global and diverse business and social environments. The key CQ benefits for individuals, teams and organisations include increased intercultural adjustment, improvement cultural judgment and decision-making, increased work performance, and greater effectiveness in intercultural negotiations, to name a few.

A malleable competence, CQ can be developed through training and coaching. This course will provide you with a conceptual framework for CQ and a set of tools to further your intercultural competence so that you can navigate and explore the world effectively.



Track 4 Success in the Globalised Marketplace

Course	Teaching Dates	No. of Academic Units	Name of Instructor
BU5642 Leadership in the 21st Century	3 July to 28 July 2023	3	 Dr Stewart L. Arnold

Description

Leadership is a hot topic in corporations, government agencies, and non-profit organisations. But what do leaders really do in the world of work? What do YOU need to do, in order to become a really effective leader? This course is for students who hope to become managers, leaders, or consultants in workplaces anywhere in the world or who want a deeper understanding of what leadership can mean for you personally. The course covers some important research and case-based principles for leadership in the real world of work, with an emphasis on both “eastern” and “western” approaches to leadership. You will learn:

- a) practical skills and techniques for networking, handling organisational politics, managing and influencing people at work (including using empathetic listening, running staff meetings, motivating people, coaching employees, and so on).
- b) teamwork and interpersonal skills for shared leadership
- c) about your own leadership image and how to develop your leadership knowledge and skills throughout your careers.



Track 4 Success in the Globalised Marketplace

Course	Teaching Dates	No. of Academic Units	Name of Instructor
CS2400 Foundation of Information Analytics	3 July to 28 July 2023	3	 Dr Lee Chu Keong

Description

Today, many organisations generate, and collect (“harvest”), unimaginable quantities of data of all types. However, merely collecting lots of data is pointless. The critical step is to analyse the data so that it can be transformed into information and action. The key idea is to transform data in such a way that it can be used for business advantage. An important tool that enables this transformation is statistics. This is the subject matter of this course. Statistics will be presented in a mathematically friendly and non-threatening manner. The course emphasises conceptual understanding of the material, and not on the exact keystrokes needed to accomplish specific statistical tests.



Track 4 Success in the Globalised Marketplace

Course	Teaching Dates	No. of Academic Units	Name of Instructor
HP3901 Cultural Psychology	3 July to 28 July 2023	3	 Albert Lee (Asst Prof)

Description

Humans are social animals with a lot in common, but there are also remarkable differences across cultures whereby people do not think, feel, or behave in the same way. Why is it that people in some cultures have their first name listed before their last, while others do the reverse? Is the wisdom of “practice makes perfect” equally emphasized in different parts of the world? Some parents discipline their kids by threatening to disown them while others resort to grounding, why? You will find insight into these and other observations of culture and psychology in this course. Finally, you will receive progressive training on theoretical thinking, critical reasoning, and methodological designs.



Track 4 Success in the Globalised Marketplace


Course	Teaching Dates	No. of Academic Units	Name of Instructor
HS0301 Environmental Sustainability	3 July to 28 July 2023	3	 Md Saidul Islam (Assoc Prof)

Description

Our planet is undergoing radical environmental and social changes. Environmental sustainability has now been put into question by, for example, our consumption patterns, loss of biodiversity, depletion of resources, and exploitative power relations. With apparent ecological and social limits to globalization and development, the current levels of consumption are unsustainable, inequitable, and inaccessible to the majority of humans. Understanding the environmental sustainability is a crucial matter at a time when our planet is in peril - both environmentally and socially. This course will show possible pathways for a sustainable earth.



Track 4 Success in the Globalised Marketplace

Course	Teaching Dates	No. of Academic Units	Name of Instructor
BC2406 Analytics I: Visual & Predictive Analytics	3 July to 28 July 2023	4	 Neumann Chew

Description

Most organizations are data rich and information poor. The large volumes of data in an organization are “oilfields” rich in information content that are pending extraction with the right tools and models. Analytics involves the art of data exploration, visualization, communication and the science of analyzing large quantities of data in order to discover meaningful patterns and useful insights to support decision-making. The primary objective of this course is to introduce students to various techniques available to extract useful insights from the large volumes of data.


At the end of the course, students will not only see the substantial opportunities that exist in real world, but also learn techniques that allow them to exploit these opportunities.

Pre-requisite:

Statistics & Analysis




Track 4 Success in the Globalised Marketplace

Course	Teaching Dates	No. of Academic Units	Name of Instructor
AB0602 Communication Management Strategies	3 July to 28 July 2023	4	 Lin Ai-Leen
Description			
<p>This course will prepare you for the communication challenges you are likely to face in rapidly evolving business environments. By applying relevant communication principles and frameworks, you will learn to present yourself confidently in the way you speak and write, and to participate in your chosen profession with presence and persuasiveness.</p> <p>The course is practical and interactive. You will get opportunities to hone your presentation skills through video-recorded assignments, as well as receive personalised feedback on your performance. You will also gain practice in crafting messages for a range of business contexts, including email and slide deck reports. In addition, the course addresses other new demands in today's workplace, especially with the prevalence of online communication. You will learn how to enhance your Executive Presence in both face-to-face and online settings. You will also apply your skills to contexts that require unplanned, spontaneous speaking, such as small group discussions.</p> <p><u>Pre-requisites:</u> Communication Management Fundamentals, Inquiry & Communication in an Interdisciplinary World</p>			



Track 4 Success in the Globalised Marketplace

Course	Teaching Dates	No. of Academic Units	Name of Instructor
AB3601 Strategic Management	3 July to 28 July 2023	4	 Dr Li Yan

Description


The purpose of the Strategic Management Course is to develop students' knowledge and skills to identify and evaluate the sources of superior firm performance through applying selected conceptual frameworks. Students will learn to analyse the external and internal environments of a firm, and formulate and execute different types of strategies considering good corporate governance and sustainability. This course is appropriate for accounting and business students who have already taken entry-level courses in accounting ratio analyses, organisational behaviour, and marketing. Upon completion of the course, students will be able to critically analyse business issues from a strategic perspective, such as why and how firms can achieve sustainable competitive advantages in a highly volatile and competitive global business environment.

Pre-requisite:

Organisational Behaviour & Design/ Marketing



Track 5 New Technologies, New World

Course	Teaching Dates	No. of Academic Units	Name of Instructor
CZ2004 Human Computer Interaction	3 July to 28 July 2023	3	 Dr Owen Noel Newton Fernando


Description

This course aims to provide an introduction to human-computer interaction, with an overarching goal of inculcating into you the habit of adopting a user-centric perspective on usability when designing, evaluating and innovating new user interfaces. More specifically, the objectives are to get you to:

- (a) appreciate and understand the significance of considering usability issues in interface development, including user requirements, measurements and various usability tests;
- (b) acquire vocabulary to frame and articulate HCI issues and considerations for different computing applications;
- (c) learn first principles in user interface design and develop basic ability to apply design considerations to both current and future interface modalities;
- (d) obtain a perspective of how HCI needs to be aligned with human thought processes and physical abilities, and
- (e) be aware of the large range of user interfaces in society today, and appreciate how HCI design is applied in various sectors of the computing industry.



Track 5 New Technologies, New World

Course	Teaching Dates	No. of Academic Units	Name of Instructor
IE4483 Artificial Intelligence and Data Mining	3 July to 28 July 2023	3	 Wen Bihan (Asst Prof)

Description

This course aims to introduce the fundamental theory and concepts of Artificial intelligence (AI) and Data Mining methods, in particular state space representation and search strategies, association rule mining, supervised learning, classifiers, neural networks, unsupervised learning, clustering analysis, and their applications in the area of AI and Data Mining. This can be summarized as:


1. To understand the concepts of knowledge representation for state space search, strategies for the search.
2. To understand the basics of a data mining paradigm known as Association Rule Mining and its application to knowledge discovery problems.
3. To understand the fundamental theory and concepts of supervised learning, unsupervised learning, neural networks, several learning paradigms and its applications

Pre-requisites:

1. Background on calculus and linear algebra
2. Basics on optimization (e.g., argmin, variable, norms)
3. Students are encouraged to learn at least one programming language, e.g., Python, C / C++, etc.




Track 5 New Technologies, New World

Course	Teaching Dates	No. of Academic Units	Name of Instructor
EE5084 Cyber Security	3 July to 28 July 2023	3	 Mohammed Yakoob Siyal (Assoc Prof)
Description			
<p>The objective of this course is to provide students with basic appreciation and understanding of the underlying security issues and implications of the use of various networked systems and electronic devices in the modern cyber-society from both user and management perspectives.</p> <p>Topics to be covered include overview of information systems and devices in a global network environment, threats to information systems and devices, security models, and concepts for secrecy, integrity and availability. Other topics of security concerns will also be explored: security tools and devices, cryptology, hard ware security concerns, personnel security standards and legal implications.</p>			



Track 5 New Technologies, New World

Course	Teaching Dates	No. of Academic Units	Name of Instructor
MA5030 Bioprinting: Principles and Applications	3 July to 28 July 2023	3	 Yeong Wai Yee (Prof)


Description

This course aims to provide a comprehensive understanding of Bioprinting. Bioprinting is a multidisciplinary technology that merges the fields of cell culture, biomaterials science and mechanical engineering. This is a new manufacturing paradigm that has huge potential impact in the development of advanced biological tissue models and medical therapeutic products. The topics covered are tissue engineering, prototyping of scaffolds, cell sources, biomaterials and applications.

The course starts with introduction to tissue engineering and scaffolds for tissue engineering. Various bioprinting processes will be explained and the materials for bioprinting will be introduced. The students will also learn about cell sources and 3D cell culture techniques. Other topics include computational design and simulation in bioprinting. The students will attend a workshop on bioprinting to be exposed to the operation of a bioprinter. There will be also a group discussion session for the students to critically analyze the research field of bioprinting from their point of view.



Track 5 New Technologies, New World

Course	Teaching Dates	No. of Academic Units	Name of Instructor
MA5031 3D Printing and Additive Manufacturing	3 July to 28 July 2023	3	 Yeong Wai Yee (Prof)
Description			
<p>This course aims to provide a general understanding of Additive Manufacturing or 3D Printing as it is more commonly known. It starts with an introduction and the importance of 3D Printing and describes the process chain. The course will equip you with all the 3D printing systems and technologies, their pros and cons. It will also cover the file format used in 3D printers. More importantly, a comprehensive range of applications and case studies will be covered. Finally, benchmarking, growth and trends will be described. You will go through a lab session to see 3D printer systems and understand the working principles as well as applications of these systems.</p>			

