NTU-NUS/SMU/SUTD PhD Student Exchange Programme
List of NTU Courses to be offered in Semester 2 AY2024-25

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
ASE	ES7012	Structural Geology	4	This course is designed to give students an understanding of the deformation of Earth materials, including mountain building and plate tectonics, faulting and earthquakes, folding, and ductile deformation.	Thursday 13:30 – 16:20N1.1-B2-01C (E2S2 Lab 2) Friday 09:30 – 12:20N1.1-B2-01B (E2S2 Lab 1)	Student must seek approval from the course instructor and attached the email approval.
ASE	ES7019	Climate & Climate Change	3	This course is designed where students will learn how the climate system works, what caused climate change in the past, and how climate is and will be changed by human activity. Students will learn about the climate system from both theoretical and observational points of view, and they will gain basic mathematical skills in the process. With that students are able to establish a solid understanding on the evolution of past climate, the physical and chemical basis for climate change, and gain awareness of anthropogenic impact on the climate system. At the end of this course, students will be familiar with analytical and mathematical tools to study the climatic state. And finally, to be able to link the theory to the observation data.	Tuesday 09:30 – 12:20 LT4	Student must seek approval from the course instructor and attached the email approval.
ASE	ES7020	Introduction to Geophysics	4	The main goal of this class is to provide students with general understanding of some techniques that are used to probe the Earth's surface. The techniques that will be presented during this class are used in both private sectors as well as in earth science in general. By the end of the course students should be able to identify which technique should be used depending on the question they have to answer. Students should be able to appreciate the quality of the data that they collect/analyse. And they should be able to interpret those data. Wherever possible field campaign, within Singapore, will be	Monday 09.30 - 12.20 N1.1-B2-01E (E2S2 Lab 4)	Student must seek approval from the course instructor and attached the email approval.
ASE	ES7026	Coupled Human and Natural Systems	4	This course will cover the key concepts from the social and natural sciences for understanding coupled human and natural systems. Next, integrative socio-ecological approaches will be explored, and students will consider the strengths and weaknesses of these approaches. Lessons will be grounded in real-world case studies. Students will use interdisciplinary approaches for their final projects.	Tuesday15:30 – 17:20 Friday14:30 – 16:20 (TR+35)	Student must seek approval from the course instructor and attached the email approval.
CCEB	CM7015	Graduate Basic and Technical Inorganic Chemistry	2	Course Information | School of Chemistry, Chemical Engineering and Biotechnology (CCEB) | NTU Singapore	Monday & Thursday 5:30PM – 7:20PM	Grading

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CCEB	BG7002	Molecular Biophysics	3	Course Information | School of Chemistry, Chemical Engineering and Biotechnology (CCEB) | NTU Singapore	Friday, 9:30am to 12:20pm	Grading
CCDS	CE7404	Virtual Reality	3		Thursday, 1.30-4.30pm	No formal exam
CCDS	CE6121	Human Computer Interaction Theory and Practice	3		Friday, 6.30-9.30pm	No formal exam
CCDS	CE7412	Computational and Systems Biology	3		Tuesday, 2.30-5.30pm	No formal exam
CCDS	CE7453	Numerical Algorithms	3		Monday, 2.30-5.30pm	Formal Exam
CEE	CV7002	Advanced Strength of Materials	3		Mon, 1.30PM - 4.30PM	
CEE	CV7003	Advanced Engineering Mathematics	3		Fri, 6:30PM - 9:30PM	
CEE	CV7501	Membrane Science & Technology	3		Wed, 2.30PM - 5.30PM	
EEE	EE7207	Neural Networks And Deep Learning	3	https://www.ntu.edu.sg/eee/admissions/programmes/graduate-programmes/detail/master-of-science-in-computer-control-automation#curriculum	Thursday, 6.30 pm to 9.30 pm	Letter graded; Cap at 5 quota.
EEE	EE7602	Integrated Circuit Technology	3	https://www.ntu.edu.sg/eee/admissions/programmes/graduate-programmes/detail/master-of-science-in-electronics#curriculum	Wednesday, 6.30 pm to 9.30 pm	Letter graded; Cap at 5 quota.
EEE	EE7603	Semiconductor Physics & Applications	3	https://www.ntu.edu.sg/eee/admissions/programmes/graduate-programmes/detail/master-of-science-in-electronics#curriculum	Tuesday, 6.30 pm to 9.30 pm	Letter graded; Cap at 5 quota.
LKCMed	MD7102	Bio-Entrepreneurship	3	LKCMedicine's Team-Based Learning Bio-Entrepreneurship course provides post-graduate students with an understanding of the entire drug discovery and development process starting from basic and translational research to creating viable partnerships with BioPharma companies or establishing Spin-Offs. The course is open to students from diverse backgrounds ranging from medicine, life sciences and engineering to humanity and social sciences. To understand biotech investing, each student will be assigned virtual USD 500,000. Each student will use online analytic tools (e.g. Morningstar) to evaluate BioPharma companies from a list we provide, and then use the USD 500K to create an investment portfolio. Students will track their portfolio during the course, buying and selling shares on a weekly basis.	Tuesdays: 2.30 - 5.20 pm 14 Jan - 15 Apr 2025	

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
LKCMed	MD7103	Biological Imaging	3	This course will provide introduction to optical microscopy, as well as the wide variety of non-optical imaging modalities in use in modern laboratories. Developments in Physics, including the description of light in terms of its quantal properties led to new microscopy techniques based on fluorescence phenomena. Further progress led to new ways for studying matter and for imaging: Positron Emission Tomography and X-ray imaging. Developments in spectroscopy using X rays or Nuclear Magnetic Resonance also provide new high resolution techniques for imaging, such as Functional Magnetic Resonance Imaging (fMRI). Some scientific applications of the medical imaging techniques like fMRI, X-ray, CT-scans, PET and ultrasound, will be discussed. Students will be acquainted with the most prominent modern imaging techniques, such as confocal, fluorescence, NMR/MRI, PET and X rays. The students will have a chance to expose to various imaging techniques during the theoretical and practical sessions. The course might evoke a passion for imaging among students or prepare them for the laboratory by giving them a grounding in the principles, concepts, applications and language of Biological Imaging	Thursdays: 2.30 - 5.20 pm 16 Jan - 24 Apr 2025	

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
LKCMed	MD7107	Latest Development in Infectious Disease Research	3	This course is intended to students interested by the latest development in infectious diseases research. Learning objectives: critical assessment and debate on cutting-edge articles; analyse diagnostic approaches and new therapeutic strategies for viral, bacterial and fungal infections; discuss the global danger and challenges of antimicrobial resistance; discuss and propose solution for current global health challenges in communicable diseases; develop and defend research global health challenges; analyse the clinical relevance of microbiomes and redefine the Koch postulates. A project-based learning approach will be followed that includes team-based analysis of cutting-edge papers; team-based development and defence of solutions for medically relevant problems; elaboration and presentation of research proposals to solve global health issues. •Infectious Arboviruses: research towards a cure •New drug development for tuberculosis: progresses and application to other bacterial infections •Emerging superbugs in Asia •Fungal Infections (aspergillus, candida) •New approaches to viral and bacterial diagnosis •The microbiome as a source of infectious diseases: redefining the Koch postulates •Vaccines/host-directed therapies •Alternative to antibiotics for controlling bacterial infection •Regional field research on neglected tropical diseases •Infectious Disease in the Clinical Setting	Fridays: 9.30 am - 12.20 pm 17 Jan - 18 Apr 2025	

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LKCMed	MD7114	Neuroengineering	3	The course will introduce PhD students to various concepts from engineering that are used in neuroscientific research. Course content will include the following topics: • Signal processing for neural spike detection, sorting and decoding. • fMRI signal processing • Human kinematic modelling, experimentation and data analysis • Signal processing and experimentation for EEG • Eye tracking & Virtual reality as tools for neuroscientists • Medical device design and System integration fundamentals In addition to providing a strong theoretical framework, the course will give students an opportunity to perform laboratory measurements of human kinematics.	Thursdays: 2.30 - 5.20 pm 16 Jan - 24 Apr 2025	
LKCMed	MD7115	Introduction to Biostatistics with R	3	This course will cover basic statistical principles applied to biological data analysis. Statistical theory will be introduced although the focus will be on the practical usage and applications in biology. The course will be a mixture of lectures and practical sessions in the statistical language R.	Mondays: 9.30 am - 12.20 pm 13 Jan - 14 Apr 2025, makeup class on 1 April (9.30 am - 12.20 pm)	
LKCMed	MD7116	Introduction to Neuroscience, Neural Systems and Behavior	3	This course provides an introduction to the concepts, principles and technologies of contemporary cellular, molecular neuroscience, and systems neuroscience, including sensory and motor systems, behaviour, memory and cognition. Contents include: •Introduction to Neuroscience •Electrical signals of nerve cells •Voltage-dependent conductance •Ion Channels •Synaptic transmission Neurotransmitters and their receptors •Molecular signaling within neurons •Synaptic plasticity •Early brain development •Construction of neural circuits •Systems neuroscience including sensory and motor systems, behaviour, memory and cognition	Wednesdays: 2.30 - 5.20 pm 15 Jan - 16 Apr 2025	Module is pending approval

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LKCMed	MD7117	Precision Digital Therapeutics Masterclass	3	Digital Therapeutics (DTx) are software-based interventions to treat disease. Precision DTx (PDTx) delivers customised interventions at the most relevant and opportune moment to increase adherence and treatment outcomes. In the Master Class, clinical experts (medical doctors, nurses, caregivers) with patients bring concrete and pressing problems within the Singaporean Healthcare System to the participants, who then work in groups to build a PDTx prototype in 5 days. Lectures by national and international experts with a medical, technical, and management background and hands-on coaching sessions leveraging state-of-the-art PDTx and GenAI tools complement this summer school. On the final day, students present their PDTx prototype to the jury of clinical experts, patients, and investors. To this end, participants will develop a PDTx prototype that may generate a business and societal impact.	13 - 17 Jan 2025 8.30 am - 5.20 pm	Module is pending approval. This is a 5-day intensive module conducted over 1 week
MAE	MA6503	Lasers and Optics in Smart Industry	3		Friday 7pm-10pm	
MAE	MA6504	Management of Global Manufacturing	3		Wednesday 7pm-10pm	
MAE	MA6512	Fundamentals of Precision Engineering	3		Monday 7pm-10pm	
MAE	MA6513	Advanced Design for Manufacturing	3		Friday 7pm-10pm	
MAE	MA7111	Mechanics of Solids and Fracture	3		Thursday 7pm-10pm	
MSE	MS7110	History of Materials	1	Refer to MSE Postgraduate Courses webpage.	Online course (asynchronous e-learning)	Letter graded
MSE	MS7120	Inorganic Materials	3	Refer to MSE Postgraduate Courses webpage.	Online course (asynchronous e-learning)	Letter graded
MSE	MS7140	Properties of Materials	2	Refer to MSE Postgraduate Courses webpage.	Online course (asynchronous e-learning)	Letter graded
MSE	MS7220	Processing of Organic Materials	3	Refer to MSE Postgraduate Courses webpage.	Online course (asynchronous e-learning)	Letter graded
MSE	MS7320	Physical Analysis of Materials	2	Refer to MSE Postgraduate Courses webpage.	Online course (asynchronous e-learning)	Letter graded
MSE	MS7330	Electron Microscopy of Materials	4	Refer to MSE Postgraduate Courses webpage.	Online course (asynchronous e-learning)	Letter graded
MSE	MS7340	Crystal Chemistry of Materials	4	Refer to MSE Postgraduate Courses webpage.	Online course (asynchronous e-learning)	Letter graded

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MSE	MS7410	Nanomaterials	3	Refer to MSE Postgraduate Courses webpage.	Online course (asynchronous e-learning)	Letter graded
MSE	MS7430	Electronic Materials & Devices	3	Refer to MSE Postgraduate Courses webpage.	Online course (asynchronous e-learning)	Letter graded
MSE	MS7440	Environmental & Thermal Degradation of Polymeric Materials	2	Refer to MSE Postgraduate Courses webpage.	Online course (asynchronous e-learning)	Letter graded
MSE	MS7460	Polymer Recycling & Sustainable Polymeric Materials	2	Refer to MSE Postgraduate Courses webpage.	Online course (asynchronous e-learning)	Letter graded
MSE	MS7480	Polymer Properties, Design & Sustainability	1	Refer to MSE Postgraduate Courses webpage.	Online course (asynchronous e-learning)	Letter graded
NBS	BR7311	Seminar in Capital Market Research in Accounting	3	https://www.ntu.edu.sg/docs/librariesprovider84/phd-programme/course-outlines.pdf?sfvrsn=e8c7caf2_3	Academic Calendar | Nanyang Business School | NTU Singapore	
NBS	BR7312	Seminar in Behavioural Research in Accounting	3	https://www.ntu.edu.sg/docs/librariesprovider84/phd-programme/course-outlines.pdf?sfvrsn=e8c7caf2_3	Academic Calendar | Nanyang Business School | NTU Singapore	
NBS	BR7327	Empirical Research II (Corporate)	3	https://www.ntu.edu.sg/docs/librariesprovider84/phd-programme/course-outlines.pdf?sfvrsn=e8c7caf2_3	Academic Calendar | Nanyang Business School | NTU Singapore	
NBS	BR7331	Seminar in Information Systems Research	3	https://www.ntu.edu.sg/docs/librariesprovider84/phd-programme/course-outlines.pdf?sfvrsn=e8c7caf2_3	Academic Calendar | Nanyang Business School | NTU Singapore	
NBS	BR7332	Contemporary Issues in Information Systems	3	https://www.ntu.edu.sg/docs/librariesprovider84/phd-programme/course-outlines.pdf?sfvrsn=e8c7caf2_3	Academic Calendar | Nanyang Business School | NTU Singapore	
NBS	BR7347	Longitudinal Research, Theory, Design & Data Analysis	3	https://www.ntu.edu.sg/docs/librariesprovider84/phd-programme/course-outlines.pdf?sfvrsn=e8c7caf2_3	Academic Calendar | Nanyang Business School | NTU Singapore	
NBS	BR7351	Seminar in Consumer Behaviour	3	https://www.ntu.edu.sg/docs/librariesprovider84/phd-programme/course-outlines.pdf?sfvrsn=e8c7caf2_3	Academic Calendar | Nanyang Business School | NTU Singapore	
NBS	BR7352	Seminar in Marketing Modelling	3	https://www.ntu.edu.sg/docs/librariesprovider84/phd-programme/course-outlines.pdf?sfvrsn=e8c7caf2_3	Academic Calendar | Nanyang Business School | NTU Singapore	
NBS	BR7374	Seminar in Entrepreneurship	3	https://www.ntu.edu.sg/docs/librariesprovider84/phd-programme/course-outlines.pdf?sfvrsn=e8c7caf2_3	Academic Calendar | Nanyang Business School | NTU Singapore	
NCPA	PM6105	Research and Statistical Methods in Policy Analysis	3		To be released in early December	Graded
NCPA	PM6139	The Singapore Economy	3		To be released in early December	Graded

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NIE	MAE903	Sociolinguistic Perspectives on the Classroom	4	This course examines language in its social context, including language use in multilingual communities, social reasons for language change, language planning, pidgin languages, linguistic variation based on geography, social class, and gender, and issues in cross-cultural communication. It also considers the impact these concepts have on Singapore classrooms.		Letter graded
NIE	MAE904	Language Teaching Methodology	4	In this course, we explore the rationale and principles behind the paradigm shift in language teaching methodologies and evaluate their appropriacy for the local teaching context in Singapore. Participants will learn about the relationship between methodology and syllabus design in planning appropriate programmes for teaching the different language skills.		Letter graded
NIE	MAE908	Research in Teaching Written Discourse	4	The purpose of this course is to acquaint students with current theoretical models of writing that have informed recent research in the teaching of first language and second/foreign language writing. Discussion of major issues will include critical evaluation of writing research and instructional practices with reference to the development of writing competencies beyond the level of sentence decoding and production.		Letter graded
NIE	MAE918	Bilingualism and Biliteracy: Theory and Practice	4	This course provides an in depth look at the theory, practice, methods of data collection, approaches to data coding, and new directions in the field of bilingualism and biliteracy. The course will focus on both biliteracy in the classroom and biliteracy in society. In terms of the classroom we will discuss how best to teach children who are learning English as a second/third language and how to help emergent bilinguals struggling to acquire reading skills in English. In terms of biliteracy in society, we will look at the way biliteracy is celebrated in advertising, media and creative writing.		Letter graded

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NIE	MAS912	Heritage, History and Culture	4	This course aims to intellectually equip you with the methods and practices that would enable you to make your own assessments about various aspects of (in)tangible heritage. This course intends to engage students in making practical assessments of the tangible built heritage and the intangible heritage of cultural practices and traditions. In the course, students examine the heritage value of historical sites and landmarks as well as cultural traditions. Students do a major case study of a place or a cultural practice that they consider to be of heritage value. The significance and meaning of what constitute heritage is covered. Students consider why some historical sites and cultural traditions and not others are regarded as essential for school field trips and tourism. The question of how the public perceives the past as it is presented in museums is also analysed.	15-Jan-25 | Wednesday, 17:30 - 20:30	Letter graded
NIE	MAS936	Contemporary Singapore	4	The increased emphasis on post-independence Singapore in the national humanities curriculum means that there is a need for more knowledge and discussion of Singapores development after 1965. This course takes a thematic and issue-oriented approach towards understanding the evolving political, social-cultural and economic dimensions that shaped the landscape of contemporary Singapore. Through this course, you will examine the multi-faceted challenges facing Singapore today and critically evaluate and offer potential solutions. This course is suitable for anyone looking for a deeper and more nuanced understanding of the historical and contemporary challenges facing Singapore. It is also suitable for anyone interested in learning more about Singapores development since 1965. Given the increased emphasis on Singapore history in the lower secondary history curriculum, as well as in the primary and secondary curriculum, this course will help teachers acquire a deeper and more nuanced understanding of the historical and contemporary challenges facing Singapore today.	14-Jan-25 | Tuesday, 17:30 - 20:30	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MAS950	Spatial Data Analytics in Climate Change and the Humanities	4	Spatial data analytics allows one to visualize and analyse social and environmental data. It has become an important analytical tool across a variety of fields such as planning, and most importantly, climate change. The continued emission of greenhouse gases will undoubtedly cause further warming, thereby increasing the likelihood of severe, pervasive and irreversible impacts on people and ecosystems. Moreover, low-income communities are often disproportionately affected by the impacts of climate change. Consequently, there is an urgent need for resilience planning and resource allocation that are equitable and proactive. This can potentially be achieved via an application of spatial data analytics.	13-Jan-25 | Monday, 17:30 - 20:30	Letter graded
NIE	MCL903	The Instructional Use of Children and Young Adults' Literature in Chinese Language Teaching and Learning	4	As a Chinese language teacher in a primary or secondary school, it is imperative to understand the relationship between children and adults literature and pedagogies. This course will help to enhance the understanding of the applications in children and young adults literature, allowing teachers to hone their teaching pedagogies. This course will examine the instructional use of children and young adults literature in Chinese language teaching and learning.		Letter graded
NIE	MCL906	Chinese Educational Linguistics	4	Educational Linguistics is one of the major sub-fields of Applied Linguistics. It is an area of study that integrates the research tools of linguistics and other related disciplines of the social sciences in order to investigate holistically the broad range of issues related to language and education. With an in-depth knowledge of the educational linguistics, the teacher is better equipped to plan more effective and meaningful pedagogy. Overseas renowned scholars will be invited to share their forefront ideas, thoughts and experiences which will greatly benefit the students.		Letter graded
NIE	MCL912	Chinese-English Translation and Chinese Language Teaching: From Theory to Practice	4	Being a multilingual nation, Singapore is unique in its language environment, providing a rich linguistic context for students learning the Chinese language. Our youth today are widely exposed to the Chinese and English languages, using them in their translations. These rich materials should be harnessed for formal language learning. This course will help to equip MEd students with the pre-requisite understanding.		Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MCT901	Curriculum: Theories and Issues	4	The field of curriculum is characterized by a vigorous debate and a plethora of compelling arguments. This introductory course invites participants to examine major issues and debates in the field of curriculum studies, and to bring these ideas to bear on curriculum developments in Singapore. The course is structured around the following fundamental questions: How do we understand curriculum and the work it does? What knowledge is of most worth and what should schools teach? How should this be taught and for what reasons? How does the curriculum reflect a societys understandings of its past as well as visions and aspirations? Participants will be introduced to historical development, socio-economic assumptions, challenges of globalization and the implications of these and other factors on curricular reforms. As participants consider various approaches to exploring these questions, these insights will also guide their study of key curriculum issues in Singapore. The latter include the purposes of education, selection and organization of knowledge, access to knowledge, and methods of delivery in an increasingly global context. These analyses will be done in relation to both theory and practice, and with references to implementation issues in schools and classrooms.	14-Jan-25 | Tuesday, 17:30 - 20:30	Letter graded

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NIE	MCT902	Crafting the Curriculum	4	The process of analysis will reveal that curricula are by necessity always incomplete and imperfecteverything that is included (topic, activity, question, component, material, assessment, etc.) means that something else has been excluded. This being the case, students will suggest refinements to the curriculum they have analysed, based on their understanding of the needsThis course is an introduction to curriculum development. The underlying framework for the course is that curriculum building is a process that requires ongoing study and reflection about curriculum and the practice of teaching. Central and perennial curriculum questions explored are: What knowledge is of most value and worth? How is the learner and learning viewed? What is the role of teachers in creating and enacting curriculum? The process of analysis will reveal that curricula are by necessity always incomplete and imperfect-everything that is included (topic, activity, question, component, material, assessment, etc.) means that something else has been excluded. Th is being the case, students will suggest refinements to the curriculum they have analysed, based on their understanding of the needs of learners, the socio-political milieu, and the moral and ethical dimensions of schooling.	16-Jan-25 | Thursday, 18:00 - 21:00	Letter graded
NIE	MCT903	Assessment in Education and Learning: Theories, Tensions and Issues	4	Understand the central and pivotal role of assessment practices in constructing and enacting educational outcomes and experiences. Critically examine how assessment design, judgments and feedback practices construct the process and outcomes of learning. Develop an awareness of assessment as the primary mechanism for determining merit, and an important discourse for addressing social justice issues.	15-Jan-25 | Wednesday, 18:00 - 21:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MCT904	Understanding Teachers and Teaching: Theory and Practice	4	This course explores two intertwining themes: (1) Teacher as the curriculum maker, which explores from the interpretive perspective on how teachers acquire the knowledge, skills, and values in forming their identity in situated teaching practices and curriculum making. How do we understand the composition of teachers knowledge, practice, and skills in making curriculum alive? What counts as teacher quality in an era of accountability? How do teachers provide and practice leadership in curriculum making? How do teachers learn at different points in the teachers professional continuum and in different contexts? (2) Teaching as a practice, one that has been historically understood by scholars, practitioners, and policy makers from a range of theoretical perspectives. What does it mean to conceptualize teaching as a practice situated in relation to curriculum, assessment and learning? What are the many ways people have thought about teaching as a practice, and what are the consequences of those perspectives for how we understand teaching? Who can create, evaluate, and critique knowledge about teaching? The course will introduce some major frameworks that have been used to guide research, policy recommendations, and the work of teachers and teaching. We consider the issues of teaching and teachers in an international context, drawing on research from Singapore and other countries. Some of our texts and video materials we will use will give us repeated opportunities to consider education in China, France, Japan, and the U.S. While they dont constitute a central focus of the course, they will give us some chance for shared discussion that draws on multiple and sometimes conflicting descriptions and interpretations of	13-Jan-25 | Monday, 18:00 - 21:00	Letter graded
NIE	MCT905	Theories and Perspectives of Learning	4	This is a reflection-intensive, peer-learning course that offers opportunities for students to interpret and discuss some of the established theories and perspectives on how people learn. It will cover ideas from behaviorism, cognitivism, constructivism, and social-constructivism through key topics such as meaning-making, verbal understanding, inquiry learning, representations of knowledge, the process of knowing, situated cognition, and learning in community.	15-Jan-25 | Wednesday, 18:00 - 21:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MCT911	Curriculum Implementation and Educational Change: Concepts and Issues	4	The overarching purpose of this course is to provide a theoretical, analytical, and practical framework for understanding some of the key issues and debates surrounding the implementation of national and school-based curriculum improvement efforts, professional development and school change. A variety of factors for understanding the complexity of curriculum implementation will be presented: school culture, the complexities of roles and relationships in schools, and policy implications of change initiatives. It is designed to encourage teachers and school leaders to examine their assumptions about the nature of educational change and the complex process of implementing planned change at the school and classroom levels. Participants will be expected to review, critically analyse and relate relevant literature to their own experiences of working with innovation and change initiatives in Singapore schools.	13-Jan-25 | Monday, 18:00 - 21:00	Letter graded
NIE	MCT912	Curriculum and Programme Evaluation	4	This course offers an introduction to key considerations in interpreting and designing evaluation studies in the educational context. Through considering the purposes of evaluations and exploring the nature of major evaluation approaches, participants will develop understanding of the key aspects of designing evaluation studies. The primary assessment project for all students will be to design (but not conduct) an evaluation for a curricular programme, project or product.	15-Jan-25 | Wednesday, 18:00 - 21:00	Letter graded

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NIE	MCT913	Differentiating Curriculum and Teaching for Diverse Learners	4	Contemporary deliberations about the school curriculum have tended to privilege other stakeholders and marginalize students. Unless teachers are able to take seriously what students already know and believe, any innovation in curriculum or pedagogy becomes futile. All students deserve rich learning experiences. This course is designed to encourage teachers and school leaders to examine their assumptions about curriculum, teaching and learning, and to develop a critical understanding of different student learning needs in the regular classroom. Participants will gain an understanding of the reasons and assumptions underlying differentiation. Through the readings and discussion, participants will develop an appreciation of the diverse characteristics of students who learn at different pace as well as study a variety of curriculum options such as those of content and implementation of differentiated units and lessons that optimize learning for students. This course will examine ways that classrooms can effectively differentiate curriculum and teaching to address the complex challenges of meeting the diverse learning needs of students. These will include notions of culturally responsive pedagogy, and the use of technology. Participants will learn to use research-based tools to uncover students experiences and challenges with the curriculum and use curriculum design models in planning appropriate and defensible differentiated curriculum units	13-Jan-25 | Monday, 18:00 - 21:00	Letter graded
NIE	MCT935	New Media and 21st Century Learning	4	This hands-on course aims to engage participants in examining the existing new media environment and provide an embodied new media experience for them. It addresses important, current issues in new media studies with in-depth discussion of popular perceptions/myths and implications to learning. Through the self-directed analysis of media content (critical media consumption) and production of media artefacts and participation in online communities (critical media prosumption), participants will gain a sense of new media culture and form their personal critique on the relationship between new media and 21st century learning for their refined practices.	14-Jan-25 | Tuesday, 18:00 - 21:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MEA902	Visual Arts and Creativity	4	* Learners will understand the types of cognition involved in the creative process of art making. * Learners will experience the dynamic role affective responses play in the art making process. * Learners will understand the importance of interdisciplinary knowledge in engendering creative thoughts. * Learners will also acquire foundational knowledge to facilitate creativity in the classroom setting.	13-Jan-25 | Monday, 17:30 - 20:30	Letter graded
NIE	MEA904	Art Making and Aesthetic Enquiry	4	* To discover and observe contemporary art practices though artist studio visits * To evaluate and experiment with ones own artistic practice. * To produce a body of work though a personal artistic investigation.	15-Jan-25 | Wednesday, 18:30 - 21:30	Letter graded
NIE	MED901	Academic Writing for Postgraduate Students	4	This course will guide postgraduate students in studying the discourse and linguistic conventions of academic writing in their own discipline so that they can better manage the writing of their thesis/research paper. In addition to studying the discourse practices of academic writing, students will also examine the thinking processes underlying the production of those practices.	13-Jan-25 | Monday, 18:00 - 21:00	Letter graded
NIE	MEM908	Ethics and Leadership for Educators	4	This course is aimed at exploring and clarifying the relation between ethics and leadership. Leadership may be seen as the ability to influence human relations for the sake of organisational interests and/or personal gain. From this perspective, ethics does not feature as the core of leadership or it serves only as an instrument to achieve other, non-ethical objectives. On the other hand, even if leadership is ethical in nature, there is the problem arising from the variety of competing conceptions of ethics. How does the leader negotiate among these competing conceptions of ethical thought? These considerations show why it is important to address and examine basic questions about ethics and leadership.	14-Jan-25 | Tuesday, 17:30 - 20:30	Letter graded
NIE	MEM913	Interdisciplinary Thinking for Educational Leaders	4	The course aims to introduce to participants the key concepts of interdisciplinary thinking for them to be innovative and effective educational leaders in the 21st century. The focus is on how knowledge and methods in two or more disciplines can be integrated to produce a cognitive advancement such as explaining a phenomenon, solving a problem and creating a product.	16-Jan-25 | Thursday, 17:30 - 20:30	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MEM916	Teachers as Leaders for Learning	4	Schools are continually compelled to build capacity in order to cope with increasing demands from key stakeholders such as policymakers, parents and its communities all of which require schools to innovate curricula that bring about a broadened set of learning outcomes in students. Besides investing in teacher quality through appropriate professional development framework and processes so as to significantly impact classroom teaching practices, building quality leadership is equally essential. It has been argued that leadership is second only to teaching in terms of within school factors impacting student learning outcomes. However, besides raising the quality of leaders traditionally at the senior or middle leadership levels, leadership to support teaching and learning must now extend to teacher leaders. The distribution of instructional or/and curriculum leadership practices would only lead to the development of leaders beyond senior and middle leadership levels. Hence, the need to develop teacher leaders who are equally concern to improve teaching and learning. As leaders for learning, teacher teachers work in a range of roles beyond the confines of their classrooms. The focus in this course will be leadership for learning within professional learning communities (PLCs), which includes collaborating with teachers within and beyond schools.	13-Jan-25 | Monday, 17:30 - 20:30	Letter graded
NIE	MID906	Training Methods and Strategies	4	Instructional designers need to have the knowledge of a wide repertoire of instructional theories, methods and strategies in order to address different types of performance gap. This course aims to provide conceptual understanding of the theoretical underpinnings of selected training / instructional methods and strategies. It aims to provide opportunities for students to explore concrete training / instructional design theories and to design appropriate strategies and / or activities to achieve the instructional objectives.	15-Jan-25 | Wednesday, 18:00 - 21:00	Letter graded
NIE	MID917	Designing e-Learning	4	This course explores issues of design in the crafting of learning technologies (i.e., e-learning), activities that foster learning, and overall learning environments. The following topics will be covered: the use of IT tools to support e-learning systems, the design of various instructional strategies used in e-learning system, and e-learning issues.	15-Jan-25 | Wednesday, 18:00 - 21:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MID942	Multimedia Design	4	Computer-based instruction allows the possibility of delivering lessons to students that employ multiple information modes (text, graphics, sounds, etc.) within a non-linear structure, which collectively falls under the rubric Multimedia. This subject covers the following areas: screen design, the use of media, learner control, navigation, and metaphor.	16-Jan-25 | Thursday, 18:00 - 21:00	Letter graded
NIE	MLS924	Materials Chemistry	4	Materials chemistry involves studying the relationship between structures and properties of materials. The following important major materials will be discussed in-depth in this course: metals, ceramics, glass, polymers and composites. The structure, physicochemical property, application relationship of these materials will be discussed and highlighted in the context of material properties and structural elements. Cross-disciplinary aspects of materials chemistry will be emphasized throughout this course by linking other scientific disciplines such as nanotechnology, colloidal science, biomedicine and engineering. This course will be taught by a team of chemists with different backgrounds and students will benefit from the diverse range of topics and ideas presented.	14-Jan-25 | Tuesday, 18:30 - 21:30	Letter graded
NIE	MLS945	Plasma Physics and Fusion Energy	4	Nuclear Fusion has been identified as one of the clean and long term energy sources. Fusion is the process that powers our Sun and other stars and releases huge amount of energy when two light nuclei fuse together. Thermonuclear fusion is a way to achieve nuclear fusion by using extremely high temperatures. At high temperatures, the matter goes into the fourth state i.e. Plasma. Controlled thermonuclear fusion has two prime requirements: first - heat the fusion fuel plasmas to extremely high temperatures for high fusion reaction rates and second - confine this hot dense plasma for sufficiently long durations so that enough reactions can take place for useful energy output. Significant progress has been made in the field of fusion science and technologies. Two projects, the National Ignition Facility (NIF) and ITER (a massive 20 Billion international project) are hoping to achieve breakeven, that is, producing as much energy as was required to ignite the reaction. This course will highlight the comparative advantages of Fusion Energy source over other energy resources, fundamental of Fusion and Plasmas physics, Physics and technology of few of key fusion devices such as mirror machines, tokamaks, laser inertial fusion and dense plasma focus.	15-Jan-25 | Wednesday, 18:30 - 21:30	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MLS952	Nanotechnology	4	This is an elective course that is designed for students to understand the physics, technology and applications of nanoscaled materials and devices. These include quantum confinements in 0, 1, 2 and 3 D systems, assembly and characterization of nanostructures, nanofabrication and application of various functional devices.	14-Jan-25 | Tuesday, 18:30 - 21:30	Letter graded
NIE	MLS962	Environmental Health and Toxicology	4	The study of the effect of pollution on natural ecosystems by examining biological responses at all organismal levels (molecular to whole organism) using biomarkers is an increasingly popular tool for managing environmental health by various governmental bodies. MSc (LS) Environmental Science candidates who take this course will have an opportunity to run laboratory experiments using known pollutants. Field sampling will be conducted to examine possible correlations with environmental contamination, allowing candidates to experience a direct application of ecotoxicology techniques as an environmental management tool. This experimental extension allows for a more rigorous assessment of a research-based course.	15-Jan-25 | Wednesday, 18:30 - 21:30	Letter graded
NIE	MLS964	Global Environmental Change and Vulnerable Ecosystems	4	Accelerated change in the environment on a global scale has been observed in the Anthropocene. The drivers of these global scale changes are attributed to human activities that relate to an unsustainable rate of development. Natural ecosystems (both terrestrial and aquatic) are impacted by environmental change, particularly when the scale and intensity of change exceeds the natural resilience and tolerance states of these ecosystems. It is important to be able to monitor and understand the impacts of environmental change to whole systems, especially vulnerable tropical ecosystems which largely support more than half of the earths human populations. This course aims to look at global environmental change and their impacts on vulnerable ecosystems from a scientific perspective, utilising state of the science technologies and newly developing knowledge. The course will be delivered as a practice-based field-orientated programme, which will have an overseas field component.	16-Jan-25 | Thursday, 18:30 - 21:30	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MLT903	Technologies as Cognitive Tools	4	Topics include: * Definition of cognitive tool and reasons for using technology as cognitive tools * Classification of cognitive tools and research * Concept of affordances * Use of web 2.0 tools as cognitive tools * Theoretical underpinning of concept/mind mapping tools * Theoretical underpinning of computer supported collaborative learning (CSCL) * Affordances of CSCL tools for teaching and learning	16-Jan-25 | Thursday, 18:00 - 21:00	Letter graded
NIE	MLT909	Research Methodologies for the Learning Sciences	4	1. Concept, purpose and process of conducting research 2. Research and ethics 3. Identifying research problem 4. Conducting critical literature review 5. Writing research questions 6. Designing surveys and interviews 7. Collecting quantitative data 8. Collecting qualitative data 9. Analysing quantitative data 10. Analysing qualitative data 11. Reporting research	14-Jan-25 | Tuesday, 18:00 - 21:00	Letter graded
NIE	MLT913	Technology Supported Assessment	4	This course examines the evolving landscape of educational assessment in the age of generative AI (GAI). Rather than focusing on the technology itself, well critically analyze how GAI impacts assessment practices while upholding fundamental assessment principles. Well learn to design effective assessments that leverage GAI for personalized learning and feedback, while grounding ourselves in enduring assessment concepts. Well also investigate how GAI can uncover deeper insights from assessment data and facilitate self-directed learning. Using Selwyns socio-technical framework, we will problematise the context, looking into the limitations, and ethical considerations of GAI in assessment, emphasizing the enduring priorities in this rapidly changing times.	15-Jan-25 | Wednesday, 18:00 - 21:00	Letter graded
NIE	MME916	Statistics and the Teaching of Statistics	4	This is a specialisation elective course for the MEd (Mathematics) programme. This course contributes to the following programme objectives particularly in the area of statistics and its teaching: (1) build the participants knowledge of the mathematics subject matter; (2) provide participants with the knowledge and skills related to specific ideas in mathematics education.	13-Jan-25 | Monday, 18:00 - 21:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MME917	Problem Solving and the Teaching of Problem Solving	4	This is a specialisation elective course for the MEd (Mathematics) programme. This course contributes to the following programme objectives particularly in the area of mathematical problem solving and its teaching: (1) provide participants with the knowledge and skills related to specific ideas in mathematics education; (2) develop the participants ability to relate the theoretical ideas in mathematics education to the authentic problems of practice faced by teachers in the classroom. In addition, the course also serves to develop the participants critical, reflective, and creative thinking when solving mathematics problems.	14-Jan-25 | Tuesday, 18:00 - 21:00	Letter graded
NIE	MME931	Contemporary Issues in Mathematics Education	4	This is a specialisation elective course for the MEd (Mathematics) programme that offers special topics in mathematics education. It contributes to one or more of the following programme objectives: (1) develop the participants competencies in conducting educational research; (2) provide participants with the knowledge and skills related to specific ideas in mathematics education; (3) develop the participants ability to relate the theoretical ideas in mathematics education to the authentic problems of practice faced by teachers in the classroom; (4) develop the participants ability to relate the theoretical ideas in mathematics education to the authentic problems of practice faced by teachers in the classroom, or (5) develop the participants disposition of inquiry towards issues and topics in mathematics education. This course also serves to enhance the programme by tapping into the knowledge and expertise of researchers who are involved in cutting edge research in this field of study. This course may be structured in such a way that it is offered as an intensive course within a short period of about two weeks. As such, it is suitable for full-time students or students who need to take courses over a shorter period of time.	15-Jan-25 | Wednesday, 14:00 - 17:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MML905	School-Based Curriculum Design for Malay Language Teaching	4	In the Malay Language Curriculum Pedagogy Review Committee Report (MLCPRC) 2005, among its recommendations were the need to have ML teachers identifying and nurturing their students to become the best that they can be in the learning of the language. The concept of Differentiated Instructions was also introduced to enhance and engage student learning. In 2010, the Mother Tongue Languages Review Committee submitted their recommendation indicating the need to make the teaching and learning of Mother Tongue Language more purposeful and dynamic to the needs of students and the changing demographic background of learners. Bearing these two policy reports in mind, and the Curriculum 2015 (C2015) in detailing broad-based and holistic curriculum as well as calling for finer customization of learning, there is a need for a course on school-based curriculum design (SBCD) for the teaching of ML. Also, the relevance of SBCD in Malay Language by taking into account the latest educational theories, approaches and challenges will also be examined. This course will help participants understand the concept of SBCD and how it can be implemented in the context of ML teaching and learning in Singapore schools. Participants will also be required to plan and analyze the effectiveness of an SBCD programme.		Letter graded
NIE	MML910	Bilingualism and Multilingualism	4	This course is aptly introduced due to the importance of bilingualism and multilingualism in Singapore and the world today. This course focuses on the study of bilingualism and multilingualism from the perspectives of the individual and society.		Letter graded
NIE	MSC903	Science as Practice	4	* To provide more science education courses for participants to choose in the MEd programme * To strengthen the theory and practice nexus of science as practice in science teaching * To enable participants to make connections between the ideas of science as practice to other classroom practices	13-Jan-25 | Monday, 17:30 - 20:30	Letter graded
NIE	MSC908	STEM Education History, Policies, and Research Trends	4	This course provides an overview of the history of STEM education, including the emergence of STEM and STEM education in the US and its development in other regions, such as Europe and Asia. STEM education policies in selected countries, including Singapore, will be examined and discussed. Empirical studies will be analyzed and discussed to highlight trends in STEM education research. Differences in interpretation of STEM education will be highlighted in light of the STEM education policies and research discussed.	16-Jan-25 | Thursday, 17:30 - 20:30	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MSL903	Learning Analytics for Science of Learning	4	Learning analytics is an emerging field of study that has been gathering broad interests in educational research and practices; recent research has harnessed the power of learning analytics to enhance understanding of learning processes. Learning analytics can be a game-changer that creates more effective learning environments by providing useful insights that help us to understand, visualize and predict learners performance, provide learners with personalized learning, and increase retention and success rates. As a relatively new field of study, there is no such course offered in NIE. Learning analytics can bolster the scientific bases of learning through making visible empirical evidences of learning. Hence it is timely to introduce this course as a new and relevant specialized elective for the MSc (Science of Learning) programme.	16-Jan-25 | Thursday, 18:00 - 21:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MSL904	Educational Neuroscience: Principles, Perspectives, Practices	4	Advances in imaging techniques, behavioural and psychological research enable the integration of disciplines that investigate human learning, opening up possibilities for the enhancement, update and eventually the reform of educational theories and practices. The field of educational neuroscience and its potential contributions to educational research is now more pronounced than before. Apart from shedding light on brain mechanisms that underpin cognitive and social learning development, research on brain science is also contributing towards neurobiological evidence-based interventions that are addressing educational concerns. These include issues such as i) early learning struggles and early intervention, ii) challenges that individual differences pose, iii) effectiveness of educational and treatment approaches to cognitive struggles and deficits, iv) widening possibilities that brain plasticity brings to normal (e.g. life-!ong learning) and more. Such a neuroscience and education convergence not only carry multiple implications for educational policy but at the same time, foregrounds the mutual benefits of the interaction between neurobiology and education, as education may also conceivably offer a naturalistic framework for research on the brain. This course is designed to follow the Foundations in Science of Learning course, and although it is not necessary to have taken this course previously, students will be expected to undertake some specified pre-reading.	15-Jan-25 | Wednesday, 18:00 - 21:00	Letter graded
NIE	MSM903	Algebra	4	This course in abstract algebra aims to introduce you to rings, groups, and possibly other algebraicstructures such as modules, and to present a range of examples to facilitate the understanding of theabstract theory so that you have a good grasp of the fundamental concepts in abstract algebra. Thiscourse is intended for educators, especially secondary and post-secondary school teachers, to help themto have an in-depth conceptual understanding of some topics in school mathematics such as numbersystems, polynomials, from an advanced and structural perspective of abstract algebraic systems. Thiscourse will also lay a foundation for students who plan to pursue a PhD in areas related to abstractalgebra.	16-Jan-25 | Thursday, 18:00 - 21:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MSM905	Data Science	4	This course is designed to introduce you the basics of data science methodology and let you be able toapply such methodology to real problems. This course is intended for educators, to empower them toperform data visualization, data preparation and prediction tasks. This course will also lay a foundationfor students who plan to pursue a PhD in areas related to data science/statistics.	15-Jan-25 | Wednesday, 18:00 - 21:00	Letter graded
NIE	MSM906	Discrete Mathematics	4	This course aims to expose mathematics educators to counting principles which will enhance theircontent knowledge of teaching permutations and combinations, as well as elementary probability.Additionally, this course introduces a useful branch of discrete mathematics called graph theory whichhas many applications in modelling real-life contexts. This course also lays a foundation for students who plan to pursue a PhD in the area of discrete mathematics.	17-Jan-25 | Friday, 18:00 - 21:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MTC901	Nurturing Learners and Learning	4	In this course,participants will be introduced to: 1) The art and science of positive education to encourage and support students thriving and flourishing. Participants will be introduced to the concepts of flourishing and well-being and gain an overview of the principles of Positive Education and how it can help school communities to flourish. This course explores the benefits of Positive Education, the underlying research that guides teaching practice and interventions drawn from successful frameworks of social-emotional learning, mental health and positive psychology. Participants will have the opportunity to reflect on how the concepts in the domain areas of positivity, positive relationships, positive engagement and positive accomplishment can be nurtured and embedded in classroom and school contexts. 2) The science of positive psychology to encourage and support schools and individuals to flourish. Participants will be introduced to the concept of wellbeing and its constituent components, with specific focus on Character Strengths and Mindfulness. Hence, participants will have the opportunity to develop and practice the skills, knowledge and strategies needed to enhance their students, childrens or employees well-being, while developing their character strengths and mindfulness. 3) The concept of motivation and the various approaches to motivational studies, namely the behaviourist, humanistic, cognitivist and socio-cultural perspectives. They will explore the factors influencing learner motivation, and the reasons why some learners are more motivated than others. Finally,	14-Jan-25 | Tuesday, 17:30 - 21:00	Letter graded
NIE	MTC902	Designing Curriculum: Theory and Practice	4	A good understanding of the elements of curriculum and the complex factors and relationships that contribute to or otherwise influence curriculum design and enactment can provide educators with new insights into their relationship with curriculum and the roles they do and can play in curriculum design and enactment. This course expands participants understanding of curriculum beyond the narrow conception of curriculum as a plan that teachers simply deliver and invites them to use different conceptual tools and perspectives to examine their personal experiences with curriculum. In this way, the course helps participants to reconsider teachers agency and responsibilities in curriculum designing and enactment and bring about improvements in curriculum practice.	16-Jan-25 | Thursday, 17:30 - 21:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MTC905	Understanding and Developing Pedagogical Content Knowledge	4	Among the various aspects of teacher knowledge (e.g., content or subject matter knowledge, pedagogical knowledge, knowledge of students, instructional knowledge, knowledge on assessment, curriculum knowledge), pedagogical content knowledge (PCK) has been proposed to pull together these knowledges. Hence, its relevance to educators, especially teachers (or pedagogues) is of high importance. The need to be highly skilled in PCK become very salient in the context of the demands placed on professionals to bring about effective learning in learners in order to nurture competencies required for the future society and economy. In the context of the programme, this course will bring together the interconnections of learning of the four courses: curriculum designing, assessment for learning, and learning using technology. This course allows participants to understand the concepts of PCK, and identify and explore a topic within the curriculum that are of key interest and relevance in their respective subject disciplines. For each created topic, the constituent knowledge domains of curricular knowledge, knowledge of representations i.e. teaching strategies for teaching the topic, and knowledge of student conceptions and assessment will be included.	15-Jan-25 | Wednesday, 18:00 - 21:00	Letter graded
NIE	MTC906	Educational Inquiry into Teaching and Learning	4	A strong foundational knowledge of research methods is generally essential for all masters students doing research work even inquiring into specific areas such as teaching and learning. This course will sensitize and familiarize participants with the understanding of the research process and the key concepts, principles and techniques of both quantitative and qualitative research paradigms. Specifically, course participants will be introduced to the fundamental processes of research work (e.g. formulating research questions, literature review, designs and approaches, data collection, data analysis, and interpreting research data).	16-Jan-25 | Thursday, 18:00 - 21:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MTCL901	Language Code: Theory and Practice	4	As Chinese characters are ideographic in nature, the phonetic functions are weak. Furthermore, the structure of Chinese characters are complex and difficult to recognize, to read as well as to write. Therefore, phonetic system, Hanyu Pinyin was developed to aid in learning Chinese. Chinese characters and Chinese phonics operates with two different set of rules. Chinese characters represent single syllables while Hanyu Pinyin operates with a set of standard basic rules in relation to different forms of Chinese words. As instructors of TCIL, it is important to understand the characteristics of these two codes in order to effectively teach Chinese as an international language.		Letter graded
NIE	MTCL902	Vocabulary and Grammar: Theory and Practice	4	The fundamental purpose of learning any language is for communication purpose. Be it in spoken or written communication, vocabulary and grammar are two of the most important components in any language learning, as they play a vital role in building up language proficiency. In teaching Chinese as an international language, instructors must understand the grammatical rules and its effect on vocabulary on the target language to bring about effective teaching. Hence, this course will lay a good foundation in Chinese vocabulary and grammar basics, so as to effectively teach Chinese as an international language.		Letter graded
NIE	MTCL903	Chinese-English Contrastive Analysis & Its Application	4	The use of translation in learning a foreign language is widely used as a teaching and learning strategy to help students remember, comprehend and acquire the use of the target language. The influence of the learners first language, however, will have substantial impact in the language acquisition process. Hence understanding the major difference between Chinese-English through contrastive analysis in theories and practice of translation and its application in TCIL is necessary to equip TCIL instructor with the fundamental understanding to implement the bilingual model in TCIL.		Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MTCL904	Teaching of Listening & Speaking Skills in TCIL	4	Listening and speaking are two important skills required in any language learning. They are complex skills that need to be developed consciously. In any interaction, comprehending the language used is necessary for effective communication. Hence, as instructors for TCIL, it is important to acquire the various communicative language teaching pedagogical approaches in order to teach effective communication skills. Besides acquiring pedagogical approaches in teaching non-native learners, keeping abreast with recent developments and research on the teaching of Chinese language listening and speaking content and skills are also essential to build the competencies to effectively TCIL to the 21st century learners.		Letter graded
NIE	MTCL905	Teaching of Reading And Writing Skills In TCIL	4	Reading and writing are two important literacy skills one requires to function effectively in everyday life. These two skills are interconnected and can be developed together. With global economies and emerging new technologies, new literacies are already becoming part of the educational landscape. Hence, as instructors for TCIL, it is important to understand the various teaching pedagogical approaches to engage learners of this new age. Besides acquiring pedagogical approaches in teaching non-native learners, keeping abreast with recent developments and research on the teaching of Chinese language reading and writing content and skills are also essential to build the competencies to effectively TCIL to the 21st century learners.		Letter graded
NIE	MTCL906	Application of Information Technology in TCIL	4	In todays 21st century education, the use of ICT for teaching and learning had infiltrated schools at a rapid pace. To ensure that todays digital learners are future-ready for the workforce of tomorrow, educators must understand and embrace the need to employ the use of ICT to create a 21st century learning environment. A 21st century educator must be competent to use technology with ease in teaching and learning, be it in the classroom or out of classroom where learning takes place anytime, anywhere. Hence, as TCIL instructors, it is important to understand the application of technological tools with content and pedagogical approaches, and appreciate how ICT can create an effective learning environment for TCIL.		Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MTCL907	Language Testing & Assessment in TCIL	4	Testing and assessment is an integral part of the learning process, and must be closely aligned with curricular objectives, content and pedagogy. It serves as the central function of getting the best possible evidence on what the students have learned. Teachers and students can then use this information to decide what to do next in the teaching and learning process. It is important that TCIL instructors be equipped with the necessary assessment competencies, so that quality teaching and learning can be achieved in all TCIL classrooms, bearing in mind the varied language backgrounds and proficiency levels of TCIL learners.		Letter graded
NIE	MTCL908	Analysis & Development of Instructional Materials for TCIL	4	Over the last three decades, there are many TCIL curriculums and instructional materials developed for non-native learners globally. However, TCIL instructors find it challenging to identify proper instructional materials for learners of differing abilities. This course aims to enhance the knowledge and skills of TCIL instructors in analysing the instructional materials developed by different editors and publishers. In addition, through better understanding of principles of the curriculum design and instructional materials development for TCIL, instructors will be well equipped in developing instructional materials for different learners.		Letter graded
NIE	MTCL909	Global Chinese and Contemporary China	4	The rapid rise of China as a global economy has driven an increase to the educational and pragmatic value of learning Chinese language globally. Understanding the history and development of Chinas rise and economic globalization is essential to TCIL instructors as they thread beyond the grounds of China in TCIL to non-native learners.		Letter graded
NIE	MTCL911	Professional English for TCIL Instructors	4	All teachers need to possess skills that enable them to communicate effectively with a range of stakeholders in the educational settings. Being able to apply these skills in a second language is all the more critical for Chinese language teachers who will need to fulfill school related tasks and communicate with other members of staff, students and their parents in the English medium. This course helps to prepare participants who will be working in international settings as they move through their careers.		Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MTCL912	Early Childhood Education in TCIL: Theory and Practice	4	Early childhood education is crucial as it has direct impact on the development of learning skills, social and emotional abilities of a child. It is during the early childhood years that we should accentuate the development of language, speech and literacy, as it will significantly enhance the childs learning in the later years. Educators should leverage on the varied learning styles and characteristics of early childhood learners, from infancy to the age of eight, apply corresponding learning theories into practice, to bring about effective teaching and learning of Chinese as an international language.		Letter graded
NIE	MTCL913	Chinese Language Education for International Schools	4	According to the study by International School Consultancy Research (2017), there is a rapid surge in the growth of international schools globally. With a growth in expatriate families and an increase in enrolment within the schools host country, the increasing trend is expected to continue in the next ten years. This growing demand corresponds to the need to develop professionally-trained Chinese language educators for International schools. Language offerings in international schools are unique and vary over different school programme. However, each aims to provide students with an edge in this competitive and ever-changing world. Hence, this course will broaden participants knowledge of teaching Chinese language in international school settings and provides constructive career development opportunities to participants.		Letter graded
NIE	MTD908	Training Methods and Strategies	4	Instructional designers need to have the knowledge of a wide repertoire of instructional theories, methods and strategies in order to address different types of performance gap. This course aims to provide conceptual understanding of the theoretical underpinnings of selected training/instructional methods and strategies. It aims to provide opportunities for students to explore concrete training/instructional design theories and to design appropriate strategies and/or activities to achieve the instructional objectives. Given a performance problem, the students will be able to apply the instructional theories and approaches to address the needs of the learners and the performance gap.	15-Jan-25 | Wednesday, 18:00 - 21:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MTD910	Multimedia Design	4	Computer-based instruction allows the possibility of delivering lessons to students that employ multiple information modes (text, graphics, sounds, etc.) within a non-linear structure, which collectively falls under the rubric Multimedia. This subject covers the following areas: screen design, the use of media, learner control, navigation, and metaphor. At the end of the course, students will be able to * Describe the following medias pros and cons: text, graphics, audio, animations, and videos. * Describe the pros and cons of at least 4 navigation tools. * Apply the various design guidelines to develop a multimedia package	16-Jan-25 | Thursday, 18:00 - 21:00	Letter graded
NIE	MTD912	Programme Evaluation Models and Methods	4	This course is intended to provide participants with an understanding basic theoretical, procedural, and technical aspects of evaluation. The goal is to help participants develop some basic knowledge and skills in the application of evaluation models to various training programmes.	13-Jan-25 | Monday, 18:00 - 21:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MTD913	Teaching and Learning in Higher Education	4	The Teaching and Learning in Higher Education (TLHE) course aims to provide a structured environment for early career faculty, within which they can develop their practical skills and understanding of teaching in higher education. This course begins by exploring learning theories, course design, evidence-based teaching approaches, assessment, and communication with students within the context of their own teaching. Then, learners are provided with opportunities to sharpen their understanding by putting theory into practice. Through this course, they will have opportunities to develop their confidence in the teaching practice through reflection and participation in a community of practice, and as a result, develop a critical mindset that will continue to challenge the way they teach. Content Topics: Teaching in specific higher education contexts, e.g. NTU, Poly, etc. Learning theories Teaching in your discipline Course design Constructive alignment Assessment Designing learning activities Planning a lesson Facilitating Learning Evaluating your teaching Increasing your impact in teaching Showcasing your teaching Blended learning	17-Jan-25 | Friday, 14:00 - 17:00	Letter graded
NIE	MTL901	Tamil Curriculum, Materials including IT: Selection and Evaluation	4	This module will focus on Curriculum Creation, Development with the evidence of educational and psychological theories in Learning and Literacy development. The course will include current methods of Selection of goals of a Tamil Language Curriculum, related materials; evaluation of IT related materials and assessment. This module also includes evidence based research studies, Teaching and Learning theories, learning strategies and development of Language Skills based on Holistic Second Language Curriculum for Singapore.		Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MTL903	Tamil Language in Education	4	This module aims to strengthen students knowledge on teaching Tamil as a second language in Singapore. The bilingual policy in Singapore will also be covered in the course. The module will elaborate on Language Acquisition, Language Learning theories. Strategies and approaches on teaching Tamil language and developing the four language skills of students effectively will also be elaborated in this module.		Letter graded
NIE	MUE901	Issues in Music Education	4	This course focuses on the historical, psychological and sociological foundations of teaching and learning music. The course also explores in depth current curricular thinking and issues in music education. By the end of the course, students should be able to: i) Articulate the historical underpinnings of music education in Singapore ii) Relate current thinking about the teaching and learning of music from an international perspective to the local context iii) Identify current issues within music education with theoretical and pedagogical understanding.	14-Jan-25 | Tuesday, 17:30 - 20:30	Letter graded
NIE	MUE903	Popular Culture and ICT in Music Education	4	This course consists of two main components. Firstly, it examines the development and practice of popular musics through practical sessions and critical review, and explores fundamental concepts and issues on their applications and implications in the music classroom. Secondly, it provides a theoretical basis for developing music curriculum and pedagogy for schools by examining ways in which ICT is used in music and music education. * Popular musics and their significance in music education. * Development of popular musics from its Anglo-American Roots; development of vernacular pop musics in Asia such as J pop, K pop, Bhagra, Mat-Rok and Canto-Mando pop. * Exploring musical genres: Rhythm Blues, Funk, Soul, Blues, Rock Roll, Rock, Fusion Rock, Heavy Metal and standard Top 40s pop and media music charts. * Learning to Perform in a real music setting; practical sessions on the basic techniques of various pop instruments. * Popular music pedagogical practices and their applications in the music classroom. * Theoretical survey of ICT applications and platforms and their practical applications in music teaching and learning.	15-Jan-25 | Wednesday, 17:30 - 20:30	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
RSIS	IP6026	Introduction to the Political Economy of Southeast Asia	2	This course is an introduction to the political economy of Southeast Asia. Southeast Asia is defined to include all current members of the Association of Southeast Asian Nations (ASEAN). Through the lens of political economy, this course gives an overview of Southeast Asian countries' economic performance, examines the variations among their strategies and policy responses and how regional economies are governed. The class begins by introducing alternative theoretical frameworks useful for the understanding of Southeast Asian political economy and discussing the history of Southeast Asian economies since the colonial era. This course then scrutinizes specific issue areas (e.g. trade, finance, development) to examine the interactions between economics and politics accounting for countries' policies and economic governance. The future prospects of the Southeast Asian economies such as ASEAN Economic Community and how regional economic governance could unfold are also discussed.	Trimester 2: 11 November – 20 December 2024; 6 January – 21 February 2025 (13 weeks) Every Tuesday 9:30am - 12:30pm	Graded
RSIS	IR6025	Global Governance	2	Global governance is a form of government on a planetary scale that is either very old or very new. Across time, it might retrospectively refer to the federation of sovereign nation-states under a centralized, world government, or a federation of kingdoms under a common supranational religion. Since the late 1990s, the term has referred to a process of cooperative leadership that brings together national governments, intergovernmental organizations, and civil society to achieve commonly accepted goals. It provides strategic direction and then marshals collective energies to address global challenges. This is the International Monetary Fund's definition biased in favour of attributing a consultative process. In reality, global governance is a series of political contestations between states, non-state actors and intergovernmental organizations over the nature of democracy, development, the environment, communications, culture, and above all the meaning of sustainable humane society on a planet faced with permeable geographical and social borders.	Trimester 2: 11 November – 20 December 2024; 6 January – 21 February 2025 (13 weeks) Every Tuesday 2:00pm - 5:00pm	Graded
SBS	BS7001	Foundation Course in Molecular & Cell Biology	3	https://www.ntu.edu.sg/sbs/admissions/programmes/graduate/research/curriculum-courses/bs7001---foundational-course-in-molecular-cell-biology	To be confirmed	No formal exam
SBS	BS7005	Practical Course in Mulitdimensional NMR spectroscopy	3	https://www.ntu.edu.sg/sbs/admissions/programmes/graduate/research/curriculum-courses/bs7005---practical-course-in-multidimensional-nmr-spectroscopy	To be confirmed	With Formal exam

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
SBS	BS7016	Bioentrepreneurship	3	https://www.ntu.edu.sg/sbs/admissions/programmes/graduate/research/curriculum-courses/bs7016---bioentrepreneurship	To be confirmed	No formal exam
SBS	BS7107	Special Topics in Computational Biology & Modeling	3	https://www.ntu.edu.sg/sbs/admissions/programmes/graduate/research/curriculum-courses/bs7107---computational-biology-modelling	To be confirmed	With Formal exam
SBS	BS7019	Fundamentals of Immunology-Concepts and Experiments	3	https://www.ntu.edu.sg/sbs/admissions/programmes/graduate/research/curriculum-courses/bs7019-fundamentals-of-immunology-concepts-and-experiments	To be confirmed	No formal exam
SoH	HR7002	Directed Readings in Art History	3	https://www.ntu.edu.sg/soh/admissions/graduate/graduate-course-descriptions/art-history#Content_C003_Col02	Check with course instructor	This is a one-to-one course and there is a list of course instructors. **To check course instructor availability prior submitting application.** Student must obtain approval of the specific course instructor. Background in Art History, English or History.
SoH	HR7003	Advanced Studies in Southeast Asian Art Histories	3	https://www.ntu.edu.sg/soh/admissions/graduate/graduate-course-descriptions/art-history#Content_C003_Col02	Wednesday, 9.30am-12.20pm	Background in Art History required
SoH	HC7003	Special Topics in Chinese Overseas & Their Relations with China	3	https://www.ntu.edu.sg/soh/admissions/graduate/graduate-course-descriptions/chinese#Content_C002_Col02	Thursday, 2.30pm-5.20pm	Nil
SoH	HC7006	Special Topics in Modern/Contemporary Chinese Literature	3	https://www.ntu.edu.sg/soh/admissions/graduate/graduate-course-descriptions/chinese#Content_C002_Col02	Friday, 9.30am-12.30pm	Nil
SoH	HC7015	East Asian Cultural Interaction: Text & Image Studies	3	https://www.ntu.edu.sg/soh/admissions/graduate/graduate-course-descriptions/chinese#Content_C002_Col02	Tuesday, 2.30pm-5.20pm	NTU students have priority in taking courses.
SoH	HL7116	Graduate Seminar in Narrative & Theory	3	https://www.ntu.edu.sg/soh/admissions/graduate/graduate-course-descriptions/english-(creative-writing)#Content_C003_Col02	Wednesday, 2.30pm-5.20pm	Requires background in literary studies or Visual Arts
SoH	HL7204	Graduate Seminar in Creative Writing: Voice	3	https://www.ntu.edu.sg/soh/admissions/graduate/graduate-course-descriptions/creative-writing#Content_C003_Col01	Thursday, 2.30pm-5.20pm	Requires background in literary studies
SPMS	PH7011	Nonlinear Dynamics	4		Monday 10:30am – 12:20pm Wednesday 10:30am – 12:20pm	
SPMS	PH7015	Advanced Optics	4		Monday 3:30pm – 5:20pm Thursday 3:30pm – 5:20pm	
SPMS	PH7020	Magnetism and Spintronics	4		Monday 1:30pm – 3:20pm Thursday 1:30pm – 3:20pm	

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
SPMS	PH7024	Graduate Quantum Mechanics	4		Thursday 10:30am – 12:20pm Friday 2:30pm – 4:20pm	
SPMS	MH7001	Continuous Methods	4		Wednesday 9:30am – 11:20am Friday 9:30am – 11:20am	
SPMS	MH7014	Graduate Seminar – Discrete Mathematics I	4		Thursday 2:30pm – 4:20pm	
SSS	HE7001	Mathematical Economics	3	The aim of this course is to provide the graduate students with advanced mathematical background needed in economic research. Topics covered will be a balance between the conventional mathematical economics and the new developments in the frontier of computational economics, which include the advanced matrix analysis and qualitative analysis, optimization with or without constraints, discrete and continuous dynamic optimization, continuous and the discrete dynamic processes, nonlinear analysis and chaos, delayed-differential systems. Introductions to Singular and non-singular perturbation theory, Wavelet analysis, Genetic algorithm, Neural network and their applications in economic analysis will be also provided. Website: https://www.ntu.edu.sg/sss/graduate-education/graduate-research/economics#Content_C047_Col00	TBA	Letter Graded
SSS	HE7003	Econometrics II	3	This course provides a detailed treatment of models for analyzing both cross-sectional and time series data. The course emphasizes application rather than theory; hence, the models introduced are illustrated with examples using real-life data. In general, theoretical developments are often carried to the extent that they enhance understanding of the model. Website: https://www.ntu.edu.sg/sss/graduate-education/graduate-research/economics#Content_C047_Col00	TBA	Letter Graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
SSS	HE7106	Topics In Mathematical Econometrics & Microeconomics	3	This course intends to equip the postgraduate students with advanced mathematical theories, methodologies and computational algorithms that are widely applied both in economic analysis and financial analysis. Topics include but not limit to Log-Concave Distributions, Optimization of Submodular Functions, Genetic Algorithm, Artificial Intelligence, Neural Network, Wavelet Analysis, Support Vector Machine, Perturbation Theory, Agent-based Modelling, and Qualitative Comparative Statistics etc. It will not only update the researchers with most recent advances but also let the students have hands-on experience on the relevant applications in economic modeling, simulation and forecasting. Website: https://www.ntu.edu.sg/sss/graduate-education/graduate-research/economics#Content_C047_Col00	TBA	Letter Graded

NTU-SUSS PhD Student Exchange Programme
List of NTU Courses to be offered in Semester 2 AY2024-25

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NCPA	PM6105	Research and Statistical Methods in Policy Analysis	3		To be released in early December	Graded
NCPA	PM6139	The Singapore Economy	3		To be released in early December	Graded
NIE	MAE903	Sociolinguistic Perspectives on the Classroom	4	This course examines language in its social context, including language use in multilingual communities, social reasons for language change, language planning, pidgin languages, linguistic variation based on geography, social class, and gender, and issues in cross-cultural communication. It also considers the impact these concepts have on Singapore classrooms.		Letter graded
NIE	MAE904	Language Teaching Methodology	4	In this course, we explore the rationale and principles behind the paradigm shift in language teaching methodologies and evaluate their appropriacy for the local teaching context in Singapore. Participants will learn about the relationship between methodology and syllabus design in planning appropriate programmes for teaching the different language skills.		Letter graded
NIE	MAE908	Research in Teaching Written Discourse	4	The purpose of this course is to acquaint students with current theoretical models of writing that have informed recent research in the teaching of first language and second/foreign language writing. Discussion of major issues will include critical evaluation of writing research and instructional practices with reference to the development of writing competencies beyond the level of sentence decoding and production.		Letter graded
NIE	MAE918	Bilingualism and Biliteracy: Theory and Practice	4	This course provides an in depth look at the theory, practice, methods of data collection, approaches to data coding, and new directions in the field of bilingualism and biliteracy. The course will focus on both biliteracy in the classroom and biliteracy in society. In terms of the classroom we will discuss how best to teach children who are learning English as a second/third language and how to help emergent bilinguals struggling to acquire reading skills in English. In terms of biliteracy in society, we will look at the way biliteracy is celebrated in advertising, media and creative writing.		Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MAS912	Heritage, History and Culture	4	This course aims to intellectually equip you with the methods and practices that would enable you to make your own assessments about various aspects of (in)tangible heritage. This course intends to engage students in making practical assessments of the tangible built heritage and the intangible heritage of cultural practices and traditions. In the course, students examine the heritage value of historical sites and landmarks as well as cultural traditions. Students do a major case study of a place or a cultural practice that they consider to be of heritage value. The significance and meaning of what constitute heritage is covered. Students consider why some historical sites and cultural traditions and not others are regarded as essential for school field trips and tourism. The question of how the public perceives the past as it is presented in museums is also analysed.	15-Jan-25 | Wednesday, 17:30 - 20:30	Letter graded
NIE	MAS936	Contemporary Singapore	4	The increased emphasis on post-independence Singapore in the national humanities curriculum means that there is a need for more knowledge and discussion of Singapores development after 1965. This course takes a thematic and issue-oriented approach towards understanding the evolving political, social-cultural and economic dimensions that shaped the landscape of contemporary Singapore. Through this course, you will examine the multi-faceted challenges facing Singapore today and critically evaluate and offer potential solutions. This course is suitable for anyone looking for a deeper and more nuanced understanding of the historical and contemporary challenges facing Singapore. It is also suitable for anyone interested in learning more about Singapores development since 1965. Given the increased emphasis on Singapore history in the lower secondary history curriculum, as well as in the primary and secondary curriculum, this course will help teachers acquire a deeper and more nuanced understanding of the historical and contemporary challenges facing Singapore today.	14-Jan-25 | Tuesday, 17:30 - 20:30	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MAS950	Spatial Data Analytics in Climate Change and the Humanities	4	Spatial data analytics allows one to visualize and analyse social and environmental data. It has become an important analytical tool across a variety of fields such as planning, and most importantly, climate change. The continued emission of greenhouse gases will undoubtedly cause further warming, thereby increasing the likelihood of severe, pervasive and irreversible impacts on people and ecosystems. Moreover, low-income communities are often disproportionately affected by the impacts of climate change. Consequently, there is an urgent need for resilience planning and resource allocation that are equitable and proactive. This can potentially be achieved via an application of spatial data analytics.	13-Jan-25 | Monday, 17:30 - 20:30	Letter graded
NIE	MCL903	The Instructional Use of Children and Young Adults' Literature in Chinese Language Teaching and Learning	4	As a Chinese language teacher in a primary or secondary school, it is imperative to understand the relationship between children and adults literature and pedagogies. This course will help to enhance the understanding of the applications in children and young adults literature, allowing teachers to hone their teaching pedagogies. This course will examine the instructional use of children and young adults literature in Chinese language teaching and learning.		Letter graded
NIE	MCL906	Chinese Educational Linguistics	4	Educational Linguistics is one of the major sub-fields of Applied Linguistics. It is an area of study that integrates the research tools of linguistics and other related disciplines of the social sciences in order to investigate holistically the broad range of issues related to language and education. With an in-depth knowledge of the educational linguistics, the teacher is better equipped to plan more effective and meaningful pedagogy. Overseas renowned scholars will be invited to share their forefront ideas, thoughts and experiences which will greatly benefit the students.		Letter graded
NIE	MCL912	Chinese-English Translation and Chinese Language Teaching: From Theory to Practice	4	Being a multilingual nation, Singapore is unique in its language environment, providing a rich linguistic context for students learning the Chinese language. Our youth today are widely exposed to the Chinese and English languages, using them in their translations. These rich materials should be harnessed for formal language learning. This course will help to equip MEd students with the pre-requisite understanding.		Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MCT901	Curriculum: Theories and Issues	4	The field of curriculum is characterized by a vigorous debate and a plethora of compelling arguments. This introductory course invites participants to examine major issues and debates in the field of curriculum studies, and to bring these ideas to bear on curriculum developments in Singapore. The course is structured around the following fundamental questions: How do we understand curriculum and the work it does? What knowledge is of most worth and what should schools teach? How should this be taught and for what reasons? How does the curriculum reflect a societys understandings of its past as well as visions and aspirations? Participants will be introduced to historical development, socio-economic assumptions, challenges of globalization and the implications of these and other factors on curricular reforms. As participants consider various approaches to exploring these questions, these insights will also guide their study of key curriculum issues in Singapore. The latter include the purposes of education, selection and organization of knowledge, access to knowledge, and methods of delivery in an increasingly global context. These analyses will be done in relation to both theory and practice, and with references to implementation issues in schools and classrooms.	14-Jan-25 | Tuesday, 17:30 - 20:30	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MCT902	Crafting the Curriculum	4	The process of analysis will reveal that curricula are by necessity always incomplete and imperfecteverything that is included (topic, activity, question, component, material, assessment, etc.) means that something else has been excluded. This being the case, students will suggest refinements to the curriculum they have analysed, based on their understanding of the needsThis course is an introduction to curriculum development. The underlying framework for the course is that curriculum building is a process that requires ongoing study and reflection about curriculum and the practice of teaching. Central and perennial curriculum questions explored are: What knowledge is of most value and worth? How is the learner and learning viewed? What is the role of teachers in creating and enacting curriculum? The process of analysis will reveal that curricula are by necessity always incomplete and imperfect-everything that is included (topic, activity, question, component, material, assessment, etc.) means that something else has been excluded. Th is being the case, students will suggest refinements to the curriculum they have analysed, based on their understanding of the needs of learners, the socio-political milieu, and the moral and ethical dimensions of schooling.	16-Jan-25 | Thursday, 18:00 - 21:00	Letter graded
NIE	MCT903	Assessment in Education and Learning: Theories, Tensions and Issues	4	Understand the central and pivotal role of assessment practices in constructing and enacting educational outcomes and experiences. Critically examine how assessment design, judgments and feedback practices construct the process and outcomes of learning. Develop an awareness of assessment as the primary mechanism for determining merit, and an important discourse for addressing social justice issues.	15-Jan-25 | Wednesday, 18:00 - 21:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MCT904	Understanding Teachers and Teaching: Theory and Practice	4	This course explores two intertwining themes: (1) Teacher as the curriculum maker, which explores from the interpretive perspective on how teachers acquire the knowledge, skills, and values in forming their identity in situated teaching practices and curriculum making. How do we understand the composition of teachers knowledge, practice, and skills in making curriculum alive? What counts as teacher quality in an era of accountability? How do teachers provide and practice leadership in curriculum making? How do teachers learn at different points in the teachers professional continuum and in different contexts? (2) Teaching as a practice, one that has been historically understood by scholars, practitioners, and policy makers from a range of theoretical perspectives. What does it mean to conceptualize teaching as a practice situated in relation to curriculum, assessment and learning? What are the many ways people have thought about teaching as a practice, and what are the consequences of those perspectives for how we understand teaching? Who can create, evaluate, and critique knowledge about teaching? The course will introduce some major frameworks that have been used to guide research, policy recommendations, and the work of teachers and teaching. We consider the issues of teaching and teachers in an international context, drawing on research from Singapore and other countries. Some of our texts and video materials we will use will give us repeated opportunities to consider education in China, France, Japan, and the U.S. While they dont constitute a central focus of the course, they will give us some chance for shared discussion that draws on multiple and sometimes conflicting descriptions and interpretations of	13-Jan-25 | Monday, 18:00 - 21:00	Letter graded
NIE	MCT905	Theories and Perspectives of Learning	4	This is a reflection-intensive, peer-learning course that offers opportunities for students to interpret and discuss some of the established theories and perspectives on how people learn. It will cover ideas from behaviorism, cognitivism, constructivism, and social-constructivism through key topics such as meaning-making, verbal understanding, inquiry learning, representations of knowledge, the process of knowing, situated cognition, and learning in community.	15-Jan-25 | Wednesday, 18:00 - 21:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MCT911	Curriculum Implementation and Educational Change: Concepts and Issues	4	The overarching purpose of this course is to provide a theoretical, analytical, and practical framework for understanding some of the key issues and debates surrounding the implementation of national and school-based curriculum improvement efforts, professional development and school change. A variety of factors for understanding the complexity of curriculum implementation will be presented: school culture, the complexities of roles and relationships in schools, and policy implications of change initiatives. It is designed to encourage teachers and school leaders to examine their assumptions about the nature of educational change and the complex process of implementing planned change at the school and classroom levels. Participants will be expected to review, critically analyse and relate relevant literature to their own experiences of working with innovation and change initiatives in Singapore schools.	13-Jan-25 | Monday, 18:00 - 21:00	Letter graded
NIE	MCT912	Curriculum and Programme Evaluation	4	This course offers an introduction to key considerations in interpreting and designing evaluation studies in the educational context. Through considering the purposes of evaluations and exploring the nature of major evaluation approaches, participants will develop understanding of the key aspects of designing evaluation studies. The primary assessment project for all students will be to design (but not conduct) an evaluation for a curricular programme, project or product.	15-Jan-25 | Wednesday, 18:00 - 21:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MCT913	Differentiating Curriculum and Teaching for Diverse Learners	4	Contemporary deliberations about the school curriculum have tended to privilege other stakeholders and marginalize students. Unless teachers are able to take seriously what students already know and believe, any innovation in curriculum or pedagogy becomes futile. All students deserve rich learning experiences. This course is designed to encourage teachers and school leaders to examine their assumptions about curriculum, teaching and learning, and to develop a critical understanding of different student learning needs in the regular classroom. Participants will gain an understanding of the reasons and assumptions underlying differentiation. Through the readings and discussion, participants will develop an appreciation of the diverse characteristics of students who learn at different pace as well as study a variety of curriculum options such as those of content and implementation of differentiated units and lessons that optimize learning for students. This course will examine ways that classrooms can effectively differentiate curriculum and teaching to address the complex challenges of meeting the diverse learning needs of students. These will include notions of culturally responsive pedagogy, and the use of technology. Participants will learn to use research-based tools to uncover students experiences and challenges with the curriculum and use curriculum design models in planning appropriate and defensible differentiated curriculum units	13-Jan-25 | Monday, 18:00 - 21:00	Letter graded
NIE	MCT935	New Media and 21st Century Learning	4	This hands-on course aims to engage participants in examining the existing new media environment and provide an embodied new media experience for them. It addresses important, current issues in new media studies with in-depth discussion of popular perceptions/myths and implications to learning. Through the self-directed analysis of media content (critical media consumption) and production of media artefacts and participation in online communities (critical media prosumption), participants will gain a sense of new media culture and form their personal critique on the relationship between new media and 21st century learning for their refined practices.	14-Jan-25 | Tuesday, 18:00 - 21:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MEA902	Visual Arts and Creativity	4	* Learners will understand the types of cognition involved in the creative process of art making. * Learners will experience the dynamic role affective responses play in the art making process. * Learners will understand the importance of interdisciplinary knowledge in engendering creative thoughts. * Learners will also acquire foundational knowledge to facilitate creativity in the classroom setting.	13-Jan-25 | Monday, 17:30 - 20:30	Letter graded
NIE	MEA904	Art Making and Aesthetic Enquiry	4	* To discover and observe contemporary art practices though artist studio visits * To evaluate and experiment with ones own artistic practice. * To produce a body of work though a personal artistic investigation.	15-Jan-25 | Wednesday, 18:30 - 21:30	Letter graded
NIE	MED901	Academic Writing for Postgraduate Students	4	This course will guide postgraduate students in studying the discourse and linguistic conventions of academic writing in their own discipline so that they can better manage the writing of their thesis/research paper. In addition to studying the discourse practices of academic writing, students will also examine the thinking processes underlying the production of those practices.	13-Jan-25 | Monday, 18:00 - 21:00	Letter graded
NIE	MEM908	Ethics and Leadership for Educators	4	This course is aimed at exploring and clarifying the relation between ethics and leadership. Leadership may be seen as the ability to influence human relations for the sake of organisational interests and/or personal gain. From this perspective, ethics does not feature as the core of leadership or it serves only as an instrument to achieve other, non-ethical objectives. On the other hand, even if leadership is ethical in nature, there is the problem arising from the variety of competing conceptions of ethics. How does the leader negotiate among these competing conceptions of ethical thought? These considerations show why it is important to address and examine basic questions about ethics and leadership.	14-Jan-25 | Tuesday, 17:30 - 20:30	Letter graded
NIE	MEM913	Interdisciplinary Thinking for Educational Leaders	4	The course aims to introduce to participants the key concepts of interdisciplinary thinking for them to be innovative and effective educational leaders in the 21st century. The focus is on how knowledge and methods in two or more disciplines can be integrated to produce a cognitive advancement such as explaining a phenomenon, solving a problem and creating a product.	16-Jan-25 | Thursday, 17:30 - 20:30	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MEM916	Teachers as Leaders for Learning	4	Schools are continually compelled to build capacity in order to cope with increasing demands from key stakeholders such as policymakers, parents and its communities all of which require schools to innovate curricula that bring about a broadened set of learning outcomes in students. Besides investing in teacher quality through appropriate professional development framework and processes so as to significantly impact classroom teaching practices, building quality leadership is equally essential. It has been argued that leadership is second only to teaching in terms of within school factors impacting student learning outcomes. However, besides raising the quality of leaders traditionally at the senior or middle leadership levels, leadership to support teaching and learning must now extend to teacher leaders. The distribution of instructional or/and curriculum leadership practices would only lead to the development of leaders beyond senior and middle leadership levels. Hence, the need to develop teacher leaders who are equally concern to improve teaching and learning. As leaders for learning, teacher teachers work in a range of roles beyond the confines of their classrooms. The focus in this course will be leadership for learning within professional learning communities (PLCs), which includes collaborating with teachers within and beyond schools.	13-Jan-25 | Monday, 17:30 - 20:30	Letter graded
NIE	MID906	Training Methods and Strategies	4	Instructional designers need to have the knowledge of a wide repertoire of instructional theories, methods and strategies in order to address different types of performance gap. This course aims to provide conceptual understanding of the theoretical underpinnings of selected training / instructional methods and strategies. It aims to provide opportunities for students to explore concrete training / instructional design theories and to design appropriate strategies and / or activities to achieve the instructional objectives.	15-Jan-25 | Wednesday, 18:00 - 21:00	Letter graded
NIE	MID917	Designing e-Learning	4	This course explores issues of design in the crafting of learning technologies (i.e., e-learning), activities that foster learning, and overall learning environments. The following topics will be covered: the use of IT tools to support e-learning systems, the design of various instructional strategies used in e-learning system, and e-learning issues.	15-Jan-25 | Wednesday, 18:00 - 21:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MID942	Multimedia Design	4	Computer-based instruction allows the possibility of delivering lessons to students that employ multiple information modes (text, graphics, sounds, etc.) within a non-linear structure, which collectively falls under the rubric Multimedia. This subject covers the following areas: screen design, the use of media, learner control, navigation, and metaphor.	16-Jan-25 | Thursday, 18:00 - 21:00	Letter graded
NIE	MLS924	Materials Chemistry	4	Materials chemistry involves studying the relationship between structures and properties of materials. The following important major materials will be discussed in-depth in this course: metals, ceramics, glass, polymers and composites. The structure, physicochemical property, application relationship of these materials will be discussed and highlighted in the context of material properties and structural elements. Cross-disciplinary aspects of materials chemistry will be emphasized throughout this course by linking other scientific disciplines such as nanotechnology, colloidal science, biomedicine and engineering. This course will be taught by a team of chemists with different backgrounds and students will benefit from the diverse range of topics and ideas presented.	14-Jan-25 | Tuesday, 18:30 - 21:30	Letter graded
NIE	MLS945	Plasma Physics and Fusion Energy	4	Nuclear Fusion has been identified as one of the clean and long term energy sources. Fusion is the process that powers our Sun and other stars and releases huge amount of energy when two light nuclei fuse together. Thermonuclear fusion is a way to achieve nuclear fusion by using extremely high temperatures. At high temperatures, the matter goes into the fourth state i.e. Plasma. Controlled thermonuclear fusion has two prime requirements: first - heat the fusion fuel plasmas to extremely high temperatures for high fusion reaction rates and second - confine this hot dense plasma for sufficiently long durations so that enough reactions can take place for useful energy output. Significant progress has been made in the field of fusion science and technologies. Two projects, the National Ignition Facility (NIF) and ITER (a massive 20 Billion international project) are hoping to achieve breakeven, that is, producing as much energy as was required to ignite the reaction. This course will highlight the comparative advantages of Fusion Energy source over other energy resources, fundamental of Fusion and Plasmas physics, Physics and technology of few of key fusion devices such as mirror machines, tokamaks, laser inertial fusion and dense plasma focus.	15-Jan-25 | Wednesday, 18:30 - 21:30	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MLS952	Nanotechnology	4	This is an elective course that is designed for students to understand the physics, technology and applications of nanoscaled materials and devices. These include quantum confinements in 0, 1, 2 and 3 D systems, assembly and characterization of nanostructures, nanofabrication and application of various functional devices.	14-Jan-25 | Tuesday, 18:30 - 21:30	Letter graded
NIE	MLS962	Environmental Health and Toxicology	4	The study of the effect of pollution on natural ecosystems by examining biological responses at all organismal levels (molecular to whole organism) using biomarkers is an increasingly popular tool for managing environmental health by various governmental bodies. MSc (LS) Environmental Science candidates who take this course will have an opportunity to run laboratory experiments using known pollutants. Field sampling will be conducted to examine possible correlations with environmental contamination, allowing candidates to experience a direct application of ecotoxicology techniques as an environmental management tool. This experimental extension allows for a more rigorous assessment of a research-based course.	15-Jan-25 | Wednesday, 18:30 - 21:30	Letter graded
NIE	MLS964	Global Environmental Change and Vulnerable Ecosystems	4	Accelerated change in the environment on a global scale has been observed in the Anthropocene. The drivers of these global scale changes are attributed to human activities that relate to an unsustainable rate of development. Natural ecosystems (both terrestrial and aquatic) are impacted by environmental change, particularly when the scale and intensity of change exceeds the natural resilience and tolerance states of these ecosystems. It is important to be able to monitor and understand the impacts of environmental change to whole systems, especially vulnerable tropical ecosystems which largely support more than half of the earths human populations. This course aims to look at global environmental change and their impacts on vulnerable ecosystems from a scientific perspective, utilising state of the science technologies and newly developing knowledge. The course will be delivered as a practice-based field-orientated programme, which will have an overseas field component.	16-Jan-25 | Thursday, 18:30 - 21:30	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MLT903	Technologies as Cognitive Tools	4	Topics include: * Definition of cognitive tool and reasons for using technology as cognitive tools * Classification of cognitive tools and research * Concept of affordances * Use of web 2.0 tools as cognitive tools * Theoretical underpinning of concept/mind mapping tools * Theoretical underpinning of computer supported collaborative learning (CSCL) * Affordances of CSCL tools for teaching and learning	16-Jan-25 | Thursday, 18:00 - 21:00	Letter graded
NIE	MLT909	Research Methodologies for the Learning Sciences	4	1. Concept, purpose and process of conducting research 2. Research and ethics 3. Identifying research problem 4. Conducting critical literature review 5. Writing research questions 6. Designing surveys and interviews 7. Collecting quantitative data 8. Collecting qualitative data 9. Analysing quantitative data 10. Analysing qualitative data 11. Reporting research	14-Jan-25 | Tuesday, 18:00 - 21:00	Letter graded
NIE	MLT913	Technology Supported Assessment	4	This course examines the evolving landscape of educational assessment in the age of generative AI (GAI). Rather than focusing on the technology itself, well critically analyze how GAI impacts assessment practices while upholding fundamental assessment principles. Well learn to design effective assessments that leverage GAI for personalized learning and feedback, while grounding ourselves in enduring assessment concepts. Well also investigate how GAI can uncover deeper insights from assessment data and facilitate self-directed learning. Using Selwyns socio-technical framework, we will problematise the context, looking into the limitations, and ethical considerations of GAI in assessment, emphasizing the enduring priorities in this rapidly changing times.	15-Jan-25 | Wednesday, 18:00 - 21:00	Letter graded
NIE	MME916	Statistics and the Teaching of Statistics	4	This is a specialisation elective course for the MEd (Mathematics) programme. This course contributes to the following programme objectives particularly in the area of statistics and its teaching: (1) build the participants knowledge of the mathematics subject matter; (2) provide participants with the knowledge and skills related to specific ideas in mathematics education.	13-Jan-25 | Monday, 18:00 - 21:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MME917	Problem Solving and the Teaching of Problem Solving	4	This is a specialisation elective course for the MEd (Mathematics) programme. This course contributes to the following programme objectives particularly in the area of mathematical problem solving and its teaching: (1) provide participants with the knowledge and skills related to specific ideas in mathematics education; (2) develop the participants ability to relate the theoretical ideas in mathematics education to the authentic problems of practice faced by teachers in the classroom. In addition, the course also serves to develop the participants critical, reflective, and creative thinking when solving mathematics problems.	14-Jan-25 | Tuesday, 18:00 - 21:00	Letter graded
NIE	MME931	Contemporary Issues in Mathematics Education	4	This is a specialisation elective course for the MEd (Mathematics) programme that offers special topics in mathematics education. It contributes to one or more of the following programme objectives: (1) develop the participants competencies in conducting educational research; (2) provide participants with the knowledge and skills related to specific ideas in mathematics education; (3) develop the participants ability to relate the theoretical ideas in mathematics education to the authentic problems of practice faced by teachers in the classroom; (4) develop the participants ability to relate the theoretical ideas in mathematics education to the authentic problems of practice faced by teachers in the classroom, or (5) develop the participants disposition of inquiry towards issues and topics in mathematics education. This course also serves to enhance the programme by tapping into the knowledge and expertise of researchers who are involved in cutting edge research in this field of study. This course may be structured in such a way that it is offered as an intensive course within a short period of about two weeks. As such, it is suitable for full-time students or students who need to take courses over a shorter period of time.	15-Jan-25 | Wednesday, 14:00 - 17:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MML905	School-Based Curriculum Design for Malay Language Teaching	4	In the Malay Language Curriculum Pedagogy Review Committee Report (MLCPRC) 2005, among its recommendations were the need to have ML teachers identifying and nurturing their students to become the best that they can be in the learning of the language. The concept of Differentiated Instructions was also introduced to enhance and engage student learning. In 2010, the Mother Tongue Languages Review Committee submitted their recommendation indicating the need to make the teaching and learning of Mother Tongue Language more purposeful and dynamic to the needs of students and the changing demographic background of learners. Bearing these two policy reports in mind, and the Curriculum 2015 (C2015) in detailing broad-based and holistic curriculum as well as calling for finer customization of learning, there is a need for a course on school-based curriculum design (SBCD) for the teaching of ML. Also, the relevance of SBCD in Malay Language by taking into account the latest educational theories, approaches and challenges will also be examined. This course will help participants understand the concept of SBCD and how it can be implemented in the context of ML teaching and learning in Singapore schools. Participants will also be required to plan and analyze the effectiveness of an SBCD programme.		Letter graded
NIE	MML910	Bilingualism and Multilingualism	4	This course is aptly introduced due to the importance of bilingualism and multilingualism in Singapore and the world today. This course focuses on the study of bilingualism and multilingualism from the perspectives of the individual and society.		Letter graded
NIE	MSC903	Science as Practice	4	* To provide more science education courses for participants to choose in the MEd programme * To strengthen the theory and practice nexus of science as practice in science teaching * To enable participants to make connections between the ideas of science as practice to other classroom practices	13-Jan-25 | Monday, 17:30 - 20:30	Letter graded
NIE	MSC908	STEM Education History, Policies, and Research Trends	4	This course provides an overview of the history of STEM education, including the emergence of STEM and STEM education in the US and its development in other regions, such as Europe and Asia. STEM education policies in selected countries, including Singapore, will be examined and discussed. Empirical studies will be analyzed and discussed to highlight trends in STEM education research. Differences in interpretation of STEM education will be highlighted in light of the STEM education policies and research discussed.	16-Jan-25 | Thursday, 17:30 - 20:30	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MSL903	Learning Analytics for Science of Learning	4	Learning analytics is an emerging field of study that has been gathering broad interests in educational research and practices; recent research has harnessed the power of learning analytics to enhance understanding of learning processes. Learning analytics can be a game-changer that creates more effective learning environments by providing useful insights that help us to understand, visualize and predict learners performance, provide learners with personalized learning, and increase retention and success rates. As a relatively new field of study, there is no such course offered in NIE. Learning analytics can bolster the scientific bases of learning through making visible empirical evidences of learning. Hence it is timely to introduce this course as a new and relevant specialized elective for the MSc (Science of Learning) programme.	16-Jan-25 | Thursday, 18:00 - 21:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MSL904	Educational Neuroscience: Principles, Perspectives, Practices	4	Advances in imaging techniques, behavioural and psychological research enable the integration of disciplines that investigate human learning, opening up possibilities for the enhancement, update and eventually the reform of educational theories and practices. The field of educational neuroscience and its potential contributions to educational research is now more pronounced than before. Apart from shedding light on brain mechanisms that underpin cognitive and social learning development, research on brain science is also contributing towards neurobiological evidence-based interventions that are addressing educational concerns. These include issues such as i) early learning struggles and early intervention, ii) challenges that individual differences pose, iii) effectiveness of educational and treatment approaches to cognitive struggles and deficits, iv) widening possibilities that brain plasticity brings to normal (e.g. life-!ong learning) and more. Such a neuroscience and education convergence not only carry multiple implications for educational policy but at the same time, foregrounds the mutual benefits of the interaction between neurobiology and education, as education may also conceivably offer a naturalistic framework for research on the brain. This course is designed to follow the Foundations in Science of Learning course, and although it is not necessary to have taken this course previously, students will be expected to undertake some specified pre-reading.	15-Jan-25 | Wednesday, 18:00 - 21:00	Letter graded
NIE	MSM903	Algebra	4	This course in abstract algebra aims to introduce you to rings, groups, and possibly other algebraicstructures such as modules, and to present a range of examples to facilitate the understanding of theabstract theory so that you have a good grasp of the fundamental concepts in abstract algebra. Thiscourse is intended for educators, especially secondary and post-secondary school teachers, to help themto have an in-depth conceptual understanding of some topics in school mathematics such as numbersystems, polynomials, from an advanced and structural perspective of abstract algebraic systems. Thiscourse will also lay a foundation for students who plan to pursue a PhD in areas related to abstractalgebra.	16-Jan-25 | Thursday, 18:00 - 21:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MSM905	Data Science	4	This course is designed to introduce you the basics of data science methodology and let you be able toapply such methodology to real problems. This course is intended for educators, to empower them toperform data visualization, data preparation and prediction tasks. This course will also lay a foundationfor students who plan to pursue a PhD in areas related to data science/statistics.	15-Jan-25 | Wednesday, 18:00 - 21:00	Letter graded
NIE	MSM906	Discrete Mathematics	4	This course aims to expose mathematics educators to counting principles which will enhance theircontent knowledge of teaching permutations and combinations, as well as elementary probability.Additionally, this course introduces a useful branch of discrete mathematics called graph theory whichhas many applications in modelling real-life contexts. This course also lays a foundation for students who plan to pursue a PhD in the area of discrete mathematics.	17-Jan-25 | Friday, 18:00 - 21:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MTC901	Nurturing Learners and Learning	4	In this course,participants will be introduced to: 1) The art and science of positive education to encourage and support students thriving and flourishing. Participants will be introduced to the concepts of flourishing and well-being and gain an overview of the principles of Positive Education and how it can help school communities to flourish. This course explores the benefits of Positive Education, the underlying research that guides teaching practice and interventions drawn from successful frameworks of social-emotional learning, mental health and positive psychology. Participants will have the opportunity to reflect on how the concepts in the domain areas of positivity, positive relationships, positive engagement and positive accomplishment can be nurtured and embedded in classroom and school contexts. 2) The science of positive psychology to encourage and support schools and individuals to flourish. Participants will be introduced to the concept of wellbeing and its constituent components, with specific focus on Character Strengths and Mindfulness. Hence, participants will have the opportunity to develop and practice the skills, knowledge and strategies needed to enhance their students, childrens or employees well-being, while developing their character strengths and mindfulness. 3) The concept of motivation and the various approaches to motivational studies, namely the behaviourist, humanistic, cognitivist and socio-cultural perspectives. They will explore the factors influencing learner motivation, and the reasons why some learners are more motivated than others. Finally,	14-Jan-25 | Tuesday, 17:30 - 21:00	Letter graded
NIE	MTC902	Designing Curriculum: Theory and Practice	4	A good understanding of the elements of curriculum and the complex factors and relationships that contribute to or otherwise influence curriculum design and enactment can provide educators with new insights into their relationship with curriculum and the roles they do and can play in curriculum design and enactment. This course expands participants understanding of curriculum beyond the narrow conception of curriculum as a plan that teachers simply deliver and invites them to use different conceptual tools and perspectives to examine their personal experiences with curriculum. In this way, the course helps participants to reconsider teachers agency and responsibilities in curriculum designing and enactment and bring about improvements in curriculum practice.	16-Jan-25 | Thursday, 17:30 - 21:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MTC905	Understanding and Developing Pedagogical Content Knowledge	4	Among the various aspects of teacher knowledge (e.g., content or subject matter knowledge, pedagogical knowledge, knowledge of students, instructional knowledge, knowledge on assessment, curriculum knowledge), pedagogical content knowledge (PCK) has been proposed to pull together these knowledges. Hence, its relevance to educators, especially teachers (or pedagogues) is of high importance. The need to be highly skilled in PCK become very salient in the context of the demands placed on professionals to bring about effective learning in learners in order to nurture competencies required for the future society and economy. In the context of the programme, this course will bring together the interconnections of learning of the four courses: curriculum designing, assessment for learning, and learning using technology. This course allows participants to understand the concepts of PCK, and identify and explore a topic within the curriculum that are of key interest and relevance in their respective subject disciplines. For each created topic, the constituent knowledge domains of curricular knowledge, knowledge of representations i.e. teaching strategies for teaching the topic, and knowledge of student conceptions and assessment will be included.	15-Jan-25 | Wednesday, 18:00 - 21:00	Letter graded
NIE	MTC906	Educational Inquiry into Teaching and Learning	4	A strong foundational knowledge of research methods is generally essential for all masters students doing research work even inquiring into specific areas such as teaching and learning. This course will sensitize and familiarize participants with the understanding of the research process and the key concepts, principles and techniques of both quantitative and qualitative research paradigms. Specifically, course participants will be introduced to the fundamental processes of research work (e.g. formulating research questions, literature review, designs and approaches, data collection, data analysis, and interpreting research data).	16-Jan-25 | Thursday, 18:00 - 21:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MTCL901	Language Code: Theory and Practice	4	As Chinese characters are ideographic in nature, the phonetic functions are weak. Furthermore, the structure of Chinese characters are complex and difficult to recognize, to read as well as to write. Therefore, phonetic system, Hanyu Pinyin was developed to aid in learning Chinese. Chinese characters and Chinese phonics operates with two different set of rules. Chinese characters represent single syllables while Hanyu Pinyin operates with a set of standard basic rules in relation to different forms of Chinese words. As instructors of TCIL, it is important to understand the characteristics of these two codes in order to effectively teach Chinese as an international language.		Letter graded
NIE	MTCL902	Vocabulary and Grammar: Theory and Practice	4	The fundamental purpose of learning any language is for communication purpose. Be it in spoken or written communication, vocabulary and grammar are two of the most important components in any language learning, as they play a vital role in building up language proficiency. In teaching Chinese as an international language, instructors must understand the grammatical rules and its effect on vocabulary on the target language to bring about effective teaching. Hence, this course will lay a good foundation in Chinese vocabulary and grammar basics, so as to effectively teach Chinese as an international language.		Letter graded
NIE	MTCL903	Chinese-English Contrastive Analysis & Its Application	4	The use of translation in learning a foreign language is widely used as a teaching and learning strategy to help students remember, comprehend and acquire the use of the target language. The influence of the learners first language, however, will have substantial impact in the language acquisition process. Hence understanding the major difference between Chinese-English through contrastive analysis in theories and practice of translation and its application in TCIL is necessary to equip TCIL instructor with the fundamental understanding to implement the bilingual model in TCIL.		Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MTCL904	Teaching of Listening & Speaking Skills in TCIL	4	Listening and speaking are two important skills required in any language learning. They are complex skills that need to be developed consciously. In any interaction, comprehending the language used is necessary for effective communication. Hence, as instructors for TCIL, it is important to acquire the various communicative language teaching pedagogical approaches in order to teach effective communication skills. Besides acquiring pedagogical approaches in teaching non-native learners, keeping abreast with recent developments and research on the teaching of Chinese language listening and speaking content and skills are also essential to build the competencies to effectively TCIL to the 21st century learners.		Letter graded
NIE	MTCL905	Teaching of Reading And Writing Skills In TCIL	4	Reading and writing are two important literacy skills one requires to function effectively in everyday life. These two skills are interconnected and can be developed together. With global economies and emerging new technologies, new literacies are already becoming part of the educational landscape. Hence, as instructors for TCIL, it is important to understand the various teaching pedagogical approaches to engage learners of this new age. Besides acquiring pedagogical approaches in teaching non-native learners, keeping abreast with recent developments and research on the teaching of Chinese language reading and writing content and skills are also essential to build the competencies to effectively TCIL to the 21st century learners.		Letter graded
NIE	MTCL906	Application of Information Technology in TCIL	4	In todays 21st century education, the use of ICT for teaching and learning had infiltrated schools at a rapid pace. To ensure that todays digital learners are future-ready for the workforce of tomorrow, educators must understand and embrace the need to employ the use of ICT to create a 21st century learning environment. A 21st century educator must be competent to use technology with ease in teaching and learning, be it in the classroom or out of classroom where learning takes place anytime, anywhere. Hence, as TCIL instructors, it is important to understand the application of technological tools with content and pedagogical approaches, and appreciate how ICT can create an effective learning environment for TCIL.		Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MTCL907	Language Testing & Assessment in TCIL	4	Testing and assessment is an integral part of the learning process, and must be closely aligned with curricular objectives, content and pedagogy. It serves as the central function of getting the best possible evidence on what the students have learned. Teachers and students can then use this information to decide what to do next in the teaching and learning process. It is important that TCIL instructors be equipped with the necessary assessment competencies, so that quality teaching and learning can be achieved in all TCIL classrooms, bearing in mind the varied language backgrounds and proficiency levels of TCIL learners.		Letter graded
NIE	MTCL908	Analysis & Development of Instructional Materials for TCIL	4	Over the last three decades, there are many TCIL curriculums and instructional materials developed for non-native learners globally. However, TCIL instructors find it challenging to identify proper instructional materials for learners of differing abilities. This course aims to enhance the knowledge and skills of TCIL instructors in analysing the instructional materials developed by different editors and publishers. In addition, through better understanding of principles of the curriculum design and instructional materials development for TCIL, instructors will be well equipped in developing instructional materials for different learners.		Letter graded
NIE	MTCL909	Global Chinese and Contemporary China	4	The rapid rise of China as a global economy has driven an increase to the educational and pragmatic value of learning Chinese language globally. Understanding the history and development of Chinas rise and economic globalization is essential to TCIL instructors as they thread beyond the grounds of China in TCIL to non-native learners.		Letter graded
NIE	MTCL911	Professional English for TCIL Instructors	4	All teachers need to possess skills that enable them to communicate effectively with a range of stakeholders in the educational settings. Being able to apply these skills in a second language is all the more critical for Chinese language teachers who will need to fulfill school related tasks and communicate with other members of staff, students and their parents in the English medium. This course helps to prepare participants who will be working in international settings as they move through their careers.		Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MTCL912	Early Childhood Education in TCIL: Theory and Practice	4	Early childhood education is crucial as it has direct impact on the development of learning skills, social and emotional abilities of a child. It is during the early childhood years that we should accentuate the development of language, speech and literacy, as it will significantly enhance the childs learning in the later years. Educators should leverage on the varied learning styles and characteristics of early childhood learners, from infancy to the age of eight, apply corresponding learning theories into practice, to bring about effective teaching and learning of Chinese as an international language.		Letter graded
NIE	MTCL913	Chinese Language Education for International Schools	4	According to the study by International School Consultancy Research (2017), there is a rapid surge in the growth of international schools globally. With a growth in expatriate families and an increase in enrolment within the schools host country, the increasing trend is expected to continue in the next ten years. This growing demand corresponds to the need to develop professionally-trained Chinese language educators for International schools. Language offerings in international schools are unique and vary over different school programme. However, each aims to provide students with an edge in this competitive and ever-changing world. Hence, this course will broaden participants knowledge of teaching Chinese language in international school settings and provides constructive career development opportunities to participants.		Letter graded
NIE	MTD908	Training Methods and Strategies	4	Instructional designers need to have the knowledge of a wide repertoire of instructional theories, methods and strategies in order to address different types of performance gap. This course aims to provide conceptual understanding of the theoretical underpinnings of selected training/instructional methods and strategies. It aims to provide opportunities for students to explore concrete training/instructional design theories and to design appropriate strategies and/or activities to achieve the instructional objectives. Given a performance problem, the students will be able to apply the instructional theories and approaches to address the needs of the learners and the performance gap.	15-Jan-25 | Wednesday, 18:00 - 21:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MTD910	Multimedia Design	4	Computer-based instruction allows the possibility of delivering lessons to students that employ multiple information modes (text, graphics, sounds, etc.) within a non-linear structure, which collectively falls under the rubric Multimedia. This subject covers the following areas: screen design, the use of media, learner control, navigation, and metaphor. At the end of the course, students will be able to * Describe the following medias pros and cons: text, graphics, audio, animations, and videos. * Describe the pros and cons of at least 4 navigation tools. * Apply the various design guidelines to develop a multimedia package	16-Jan-25 | Thursday, 18:00 - 21:00	Letter graded
NIE	MTD912	Programme Evaluation Models and Methods	4	This course is intended to provide participants with an understanding basic theoretical, procedural, and technical aspects of evaluation. The goal is to help participants develop some basic knowledge and skills in the application of evaluation models to various training programmes.	13-Jan-25 | Monday, 18:00 - 21:00	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MTD913	Teaching and Learning in Higher Education	4	The Teaching and Learning in Higher Education (TLHE) course aims to provide a structured environment for early career faculty, within which they can develop their practical skills and understanding of teaching in higher education. This course begins by exploring learning theories, course design, evidence-based teaching approaches, assessment, and communication with students within the context of their own teaching. Then, learners are provided with opportunities to sharpen their understanding by putting theory into practice. Through this course, they will have opportunities to develop their confidence in the teaching practice through reflection and participation in a community of practice, and as a result, develop a critical mindset that will continue to challenge the way they teach. Content Topics: Teaching in specific higher education contexts, e.g. NTU, Poly, etc. Learning theories Teaching in your discipline Course design Constructive alignment Assessment Designing learning activities Planning a lesson Facilitating Learning Evaluating your teaching Increasing your impact in teaching Showcasing your teaching Blended learning	17-Jan-25 | Friday, 14:00 - 17:00	Letter graded
NIE	MTL901	Tamil Curriculum, Materials including IT: Selection and Evaluation	4	This module will focus on Curriculum Creation, Development with the evidence of educational and psychological theories in Learning and Literacy development. The course will include current methods of Selection of goals of a Tamil Language Curriculum, related materials; evaluation of IT related materials and assessment. This module also includes evidence based research studies, Teaching and Learning theories, learning strategies and development of Language Skills based on Holistic Second Language Curriculum for Singapore.		Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
NIE	MTL903	Tamil Language in Education	4	This module aims to strengthen students knowledge on teaching Tamil as a second language in Singapore. The bilingual policy in Singapore will also be covered in the course. The module will elaborate on Language Acquisition, Language Learning theories. Strategies and approaches on teaching Tamil language and developing the four language skills of students effectively will also be elaborated in this module.		Letter graded
NIE	MUE901	Issues in Music Education	4	This course focuses on the historical, psychological and sociological foundations of teaching and learning music. The course also explores in depth current curricular thinking and issues in music education. By the end of the course, students should be able to: i) Articulate the historical underpinnings of music education in Singapore ii) Relate current thinking about the teaching and learning of music from an international perspective to the local context iii) Identify current issues within music education with theoretical and pedagogical understanding.	14-Jan-25 | Tuesday, 17:30 - 20:30	Letter graded
NIE	MUE903	Popular Culture and ICT in Music Education	4	This course consists of two main components. Firstly, it examines the development and practice of popular musics through practical sessions and critical review, and explores fundamental concepts and issues on their applications and implications in the music classroom. Secondly, it provides a theoretical basis for developing music curriculum and pedagogy for schools by examining ways in which ICT is used in music and music education. * Popular musics and their significance in music education. * Development of popular musics from its Anglo-American Roots; development of vernacular pop musics in Asia such as J pop, K pop, Bhagra, Mat-Rok and Canto-Mando pop. * Exploring musical genres: Rhythm Blues, Funk, Soul, Blues, Rock Roll, Rock, Fusion Rock, Heavy Metal and standard Top 40s pop and media music charts. * Learning to Perform in a real music setting; practical sessions on the basic techniques of various pop instruments. * Popular music pedagogical practices and their applications in the music classroom. * Theoretical survey of ICT applications and platforms and their practical applications in music teaching and learning.	15-Jan-25 | Wednesday, 17:30 - 20:30	Letter graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
RSIS	IP6026	Introduction to the Political Economy of Southeast Asia	2	This course is an introduction to the political economy of Southeast Asia. Southeast Asia is defined to include all current members of the Association of Southeast Asian Nations (ASEAN). Through the lens of political economy, this course gives an overview of Southeast Asian countries' economic performance, examines the variations among their strategies and policy responses and how regional economies are governed. The class begins by introducing alternative theoretical frameworks useful for the understanding of Southeast Asian political economy and discussing the history of Southeast Asian economies since the colonial era. This course then scrutinizes specific issue areas (e.g. trade, finance, development) to examine the interactions between economics and politics accounting for countries' policies and economic governance. The future prospects of the Southeast Asian economies such as ASEAN Economic Community and how regional economic governance could unfold are also discussed.	Trimester 2: 11 November – 20 December 2024; 6 January – 21 February 2025 (13 weeks) Every Tuesday 9:30am - 12:30pm	Graded
RSIS	IR6025	Global Governance	2	Global governance is a form of government on a planetary scale that is either very old or very new. Across time, it might retrospectively refer to the federation of sovereign nation-states under a centralized, world government, or a federation of kingdoms under a common supranational religion. Since the late 1990s, the term has referred to a process of cooperative leadership that brings together national governments, intergovernmental organizations, and civil society to achieve commonly accepted goals. It provides strategic direction and then marshals collective energies to address global challenges. This is the International Monetary Fund's definition biased in favour of attributing a consultative process. In reality, global governance is a series of political contestations between states, non-state actors and intergovernmental organizations over the nature of democracy, development, the environment, communications, culture, and above all the meaning of sustainable humane society on a planet faced with permeable geographical and social borders.	Trimester 2: 11 November – 20 December 2024; 6 January – 21 February 2025 (13 weeks) Every Tuesday 2:00pm - 5:00pm	Graded

School	Course Code	Course Title	Course AU	Course Description (if not available on website)	Class Timetable	Others (e.g. Pass/Fail grading)
SoH	HR7002	Directed Readings in Art History	3	https://www.ntu.edu.sg/soh/admissions/graduate/graduate-course-descriptions/art-history#Content_C003_Col02	Check with course instructor	This is a one-to-one course and there is a list of course instructors. **To check course instructor availability prior submitting application.** Student must obtain approval of the specific course instructor. Background in Art History, English or History.
SoH	HR7003	Advanced Studies in Southeast Asian Art Histories	3	https://www.ntu.edu.sg/soh/admissions/graduate/graduate-course-descriptions/art-history#Content_C003_Col02	Wednesday, 9.30am-12.20pm	Background in Art History required
SoH	HC7003	Special Topics in Chinese Overseas & Their Relations with China	3	https://www.ntu.edu.sg/soh/admissions/graduate/graduate-course-descriptions/chinese#Content_C002_Col02	Thursday, 2.30pm-5.20pm	Nil
SoH	HC7006	Special Topics in Modern/Contemporary Chinese Literature	3	https://www.ntu.edu.sg/soh/admissions/graduate/graduate-course-descriptions/chinese#Content_C002_Col02	Friday, 9.30am-12.30pm	Nil
SoH	HC7015	East Asian Cultural Interaction: Text & Image Studies	3	https://www.ntu.edu.sg/soh/admissions/graduate/graduate-course-descriptions/chinese#Content_C002_Col02	Tuesday, 2.30pm-5.20pm	NTU students have priority in taking courses.
SoH	HL7116	Graduate Seminar in Narrative & Theory	3	https://www.ntu.edu.sg/soh/admissions/graduate/graduate-course-descriptions/english-(creative-writing)#Content_C003_Col02	Wednesday, 2.30pm-5.20pm	Requires background in literary studies or Visual Arts
SoH	HL7204	Graduate Seminar in Creative Writing: Voice	3	https://www.ntu.edu.sg/soh/admissions/graduate/graduate-course-descriptions/creative-writing#Content_C003_Col01	Thursday, 2.30pm-5.20pm	Requires background in literary studies