

Lifelong Learning Initiative for NUS Alumni: List of modules offered for Sem. 2, AY2017/18

Faculty / School	Module Code	Module Title	Suitability of the Module for this Initiative	Preferred / Recommended Entry Pre-requisite(s)	Time-tabling (Day / Evening Class)	Class Schedule (What Day?)	Can be done on AUDIT basis?	Final Exam (Yes/ No)
Faculty of Engineering	BN5201	Advanced Biomaterials	Suitable for those wanting to select and/or use biomaterials in the body	Bachelor of Engineering (Materials Science), Bachelor of Engineering (Biomedical), Bachelor of Engineering (Bioengineering)	Day	Mon	Yes	Yes
Faculty of Engineering	BN5209	Neurosensors and Signal Processing	Suitable for anyone wanting to get started in the emerging field of neurotechnology	Bachelor of Engineering (Electrical), Bachelor of Engineering (Biomedical), Bachelor of Engineering (Bioengineering)	Day	Tue	Yes	No
Faculty of Engineering	BN5210	Biosensors & Biochips	Suitable for anyone interested in sensing molecules in biological samples	Bachelor of Engineering (Biomedical), Bachelor of Engineering (Bioengineering), Bachelor of Engineering (Chemical), Bachelor of Engineering (Material Science), Bachelor of Science (Chemistry), Bachelor of Science (Life Sciences), Bachelor of Science (Pharmacy)	Day	Wed	Yes	Yes
Faculty of Engineering	CE5308	Coastal Engineering & Sediment Transport	This module introduces the student to basic concepts of coastal hydrodynamics and coastal sediment transports.	Bachelor of Engineering (Civil Engineering), Bachelor of Engineering (Mechanical Engineering), Bachelor of Engineering (Environmental Science and Engineering)	Evening	Fri	Yes	Yes
Faculty of Engineering	CN5111	Optimization of Chemical Processes	On successful completion of this module, students will be able to: 1. Define the scope of optimization in engineering, identify performance criterion and formulate the mathematical problem for optimizing chemical processes; 2. Identify/suggest research opportunities and applications of optimization from recent articles; 3. Solve the optimization problems using software such as MATLAB, and Excel spreadsheet; 4. Select the most suitable optimization software and technique, and identify key parameters and limitations; 5. Explain and interpret the results obtained from optimization; 6. Work on a group project and communicate the work through written report and oral presentation.	BEng (Chem Eng)	Evening	Wed	Yes	No

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Faculty of Engineering	CN5173	Downstream Processing of Biochemical and Pharmaceutical Products	On successful completion of this module, students will be able to: 1. Describe the various options of unit operations associated with the downstream section of biologics manufacturing; 2. Apply fundamental principles of bioseparation techniques to design unit operations in the downstream purification; 3. Evaluate some of the cutting edge technologies in research associated with downstream processing.	BEng (Chem Eng)	Evening	Thu	Yes	Yes
Faculty of Engineering	EE5132	Wireless and Sensor Networks		Minimum a bachelor degree in Electrical/Computer Engineering or Computer Science or equivalent. Knowledge in basic networking topics.	Evening	Wed	Yes	Yes
Faculty of Engineering	EE5434	Microelectronic Processes and Integration	Suitable for those who like to acquire advanced knowledge and skill in semiconductor, micro, nanoelectronics sector.	Minimum a bachelor degree in Electrical/ Computer Engineering or equivalent. Basic knowledge in microelectronics and semiconductor devices.	Evening	Thu	Yes	Yes
Faculty of Engineering	EE5903	Real-time Systems		Minimum a bachelor degree in Electrical/Computer Engineering/ Computer Science or equivalent. Programming knowledge and skill.	Evening	Tue	Yes	Yes
Faculty of Engineering	IE5121	Quality Planning and Management	This module gives an overview of quality, its importance and implementation in industry, and would be helpful to alumni whose career is focused on quality management.	Bachelor of Engineering	Evening	Fri	Yes	Yes
Faculty of Engineering	MST5002	Materials Characterization	Practicle usage for characterizing materials in Industries	Bachelor of Engineering	Evening	Thu	Yes	Yes
Faculty of Engineering	MT5911	Venture Funding	Participants will be equipped with fund raising know-how and skills through experiencing the typical start-up fund raising process that is often full of uncertainty. This will be beneficial for entrepreneurial participants interested in technology funding and venture capital.	A bachelor degree in STEM	Evening	Tue	No	No

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Faculty of Engineering	MT5913	TechLaunch - Experiential Entrepreneurship	Students will learn how to search for the maximum value creation of a (patented) technology in an iterative manner as start-ups do in the real world. Through these experiences, they will understand how technology can create value and how such value can be captured in a start-up. While doing so, their business management skills and team leadership skills will be enhanced. This will be beneficial for participants intending to venture into entrepreneurship.	A bachelor degree in STEM	Evening	Mon	No	No
Faculty of Engineering	SH5003	Fundamentals in Environmental Protection	This is a foundation module under the MSc SHE programme, and is likely to interest those who would like to learn more about industrial activities and its impact on the environment, and mitigation measures. The module covers the following: <i>Introduction to major environmental systems; causes of pollution, types and fate of pollutants, impact of pollution on environment, mitigation techniques and strategies, including regulatory control and management.</i>	BEng in Engineering, Science, Technology or Biological Science	Evening	Tue	Yes	Yes
Faculty of Engineering	SH5109	Biostatistics and Epidemiology	On successful completion of this module, students will be able to: 1. Describe main techniques used to investigate the epidemiology of occupationally induced diseases and physiological conditions in workplaces and factors that influence their frequency 2. Identify, interpret and discuss appropriate epidemiological study designs to address workplace health questions 3. Interpret and discuss the importance of epidemiological and statistical information collected themselves or presented by others.	BEng in Engineering, Science, Technology or Biological Science	Day	Sat	Yes	Yes
Faculty of Engineering	IE5208 <i>New!</i>	Systems Approach to Project Management	This module covers systems analysis and project management, and would be helpful to alumni who are involved in management of engineering and business projects.	Bachelor of Engineering	Evening	Mon	Yes	Yes
Faculty of Science	BL5218	Directed studies in Behavioural Ecology	This module covers important and technical advances in the field. This is suitable for candidates interested and wish to further pursue in this field.	Bachelor of Science (Major in Life Sciences)	Day	Wed & Fri	Yes	No
Faculty of Science	BL5233	Biological data analysis with R	This module covers an important topic in statistical tests. This is suitable for candidates interested and wish to further pursue in this field.	Bachelor of Science (Major in Life Sciences)	Day	Tue	Yes	Yes
Faculty of Science	CM5244	Topics in Environmental Chemistry	It covers the latest topics in environmental chemistry as well as the analytical techniques that are commonly use in environmental chemistry.	Bachelor of Science (Major in Chemistry) or Bachelor of Applied Science (Major in Applied Chemistry)	Evening	Wed	Yes	Yes

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Faculty of Science	CM5245	Bioanalytical Chemistry	It addresses the basics in the latest bioanalytical techniques and those which are just emerging. It is aimed at students who are interested in the applications of modern analytical techniques for bioanalytical research and development.	Bachelor of Science (Major in Chemistry) or Bachelor of Applied Science (Major in Applied Chemistry)	Evening	Fri	Yes	No
Faculty of Science	FST5204	Evidence-based Functional Foods	Allow student to grasp the state-of-the-art knowledge in functional food science and learn the research principle and methodology for development of evidence-based functional foods in relation to the chemical characterization and analysis of bioactive constituents, evaluation of their biological availability and activity, and mechanisms. Students will have the opportunity to enhance their critical thinking and literature reading ability and research proposal writing skills.	Bachelor of Science (Major in Food Science Technology) or Bachelor of Applied Science (Major in Food Science Technology)	Day	Wed	Yes	Yes
Faculty of Science	LSM4227	Stem Cell Biology	This module covers an important topic in biomedical science. This is suitable for candidates interested and wish to further pursue in this field.	Bachelor of Science (Major in Life Sciences)	Day	Tue & Fri	Yes	Yes
Faculty of Science	MA3259	Mathematical Methods in Genomics	This module is an introduction to methods and popular software tools for solving computational problems in genomics. It studies exact algorithms for those problems that can be solved easily and approximation and/or heuristic algorithms for hard problems. The objective is to develop competitive knowledge in formulating biological problems in computational terms and solving these problems using algorithm approach. This module is for students with interests in computational molecular biology and bioinformatics. Major topics: Sequence analysis, multiple sequence alignment, phylogenetic analysis, genome sequencing, gene prediction and motif finding, genome rearrangement.	Bachelor of Science (Major in Mathematics or Applied Mathematics)	Day	Mon & Thu	Yes	Yes

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Faculty of Science	MA4261	Coding and Cryptography	Error-correcting codes and security codes are very important in the data communication and storage. The focus of this module is the mathematical aspect of coding theory and cryptography. Upon completing this module, the student will have a basic appreciation of some key issues in coding theory and cryptography, some understanding of the basic theory concerning codes and ciphers and a good knowledge of some well-known codes and ciphers. Major Topics: Communication channels and Shannon's theorem, block codes and linear codes, maximum-likelihood decoding and syndrome decoding, bounds on codes and optimal codes, cyclic codes, BCH codes, encoding and decoding of cyclic codes. Public-key cryptography, RSA cryptosystem, public-key cryptosystems based on the discrete logarithm problem, elliptic curve cryptosystems, factorization algorithm and pseudoprime.	Bachelor of Science (Major in Mathematics or Applied Mathematics)	Evening	Wed	Yes	Yes
Faculty of Science	MA4270	Data Modelling and Computation	This course aims at presenting important mathematical concepts and models as well as computational methods that are often used for modelling and analysis of big data sets and complex networks. The emphasis is on mathematical modelling and computational methods for practical problems in data science. Major topics include: Convex minimization, Dimension reduction, Linear methods for classification, Kernel methods for pattern analysis, Mixture models and clustering, Sparse coding and dictionary learning.	Bachelor of Science (Major in Mathematics or Applied Mathematics)	Evening	Wed	Yes	Yes
Faculty of Science	MA5232	Modelling and Numerical Simulations	This module is designed for graduate students in mathematics. It focuses on modelling problems in real life and other disciplines into mathematical problems and simulating their solutions by scientific computing methods. Major topics covered include modelling and numerical simulations in selected areas of physical and engineering sciences, biology, finance, imaging and optimisation.	Bachelor of Science (Major in Mathematics or Applied Mathematics)	Day	Tue & Fri	Yes	No

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Faculty of Science	PC4253	Thin Film Technology	This course introduces the basic properties of thin films, and the science and technology of thin film deposition, processing and characterization. The topics covered thin film overview; overview of film growth technologies; electronic, optical & magnetic properties; film texture and mechanical properties; film nucleation and growth morphology; homoepitaxy and heteroepitaxy; vacuum technology and deposition sources; MBE, PVD & CVD; thin film characterization techniques (RHEED, STM, AFM, XRD, RBS, TEM, XPS, SIMS) and Application examples of thin films	Bachelor of Science (Major in Physics or Applied Physics)	Day	Tue & Fri	Yes	Yes
Faculty of Science	PC4262	Remote Sensing	Allow one to :1) Understanding of the physics involved in the process of acquiring remote sensing data and imagery from satellite sensors. 2) Performing basic radiometric calibration and geometric correction on satellite imagery. 3) Deriving relevant physical parameters from satellite remote sensing data/imagery based on theoretical/computational models.	Bachelor of Science (Major in Physics or Applied Physics)	Day	Tue & Fri	Yes	Yes
Faculty of Science	PC4264	Advanced Solid State Devices	This course is a follow-up of PC3241 Solid State Devices and is designed for those intending to join the semiconductor industry. The course is intended to give the students an understanding of the physics behind selected devices and that of some of their fabrication technologies. Devices examined are: MOSC & MOSFET, CCD, majority carrier diodes, transferred electron devices, non-volatile memory devices, thyristors and heterojunction devices.	Bachelor of Science (Major in Physics or Applied Physics), preferably have taken PC3241	Day	Tue & Fri	Yes	Yes
Faculty of Science	PR4201	Pharmaceutical Marketing	For practicing pharmacists who are interested on pharmaceutical marketing	BSc (Pharmacy)	Day	Tue & Fri	Yes	Yes
Faculty of Science	PR4207	Applied Pharmacokinetics and Toxicokinetics	For pharmacists and non-pharmacists looking to advance their knowledge in pharmacokinetics and toxicokinetics or considering a career switch to the pharmaceutical industry	BSc(Pharmacy)	Day	Tue & Fri	Yes	Yes
Faculty of Science	ST5202	APPLIED REGRESSION ANALYSIS	This module covers basic and frequently used regression methods in statistical data analysis, including multiple regression, model diagnostics, variable selection techniques, non-least squares estimation, nonlinear models, analysis of covariance. This module is suitable candidates who wish to further pursue in this field.	Bachelor of Science (major in Statistics)	Evening	Mon	No	Yes

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FASS	CH5224	Prescribed Texts in Literature	Students will be able to demonstrate a comprehensive study of classical and/or modern Chinese literature. This module aims to deepen and advance students' knowledge from an array of books with close analysis. Significant chapters from Shjing (Book of Songs), Chuci (The Songs of the South), Zuozhuan, Shiji (The Historical Records), the Book of Zhuang Zi, the Book of Xun Zi, Wenxin diaolong (The Literary Mind and The Carving of Dragons), the poetry of Du Fu and major works of the Chinese novel will be discussed during lessons. This module will be taught in Chinese.	Majored in Chinese Studies or Chinese Language in NUS; An NUS Honours degree (Second Class and above) or equivalent (e.g., a four-year Bachelors degree with at least an average grade of B or equivalent) in the subject or related field; or; A good Bachelors degree (at least an average grade of B or equivalent) in the subject or related field and successful completion of a placement test; or exceptionally,	Day	Mon	Yes	No
NUS Business School	ACC1701X	Accounting for Decision Makers	Suitable for non-Biz alumni	Nil	Day	Wed Thu	No	Yes
NUS Business School	ACC2002	Managerial Accounting	Both Biz and non-Biz alumni	Should have accounting background	Day	Mon Tue Wed Thu	No	Yes
NUS Business School	ACC3605	Taxation	Suitable for Biz alumni	Should have accounting background	Day	Thu Fri	No	No
NUS Business School	BSP1702X	Legal Environment of Business	Suitable for non-Biz alumni	Nil	Day	Tue	No	No
NUS Business School	BSP3001A	Strategic Management	Both Biz and non-Biz alumni	Should have relevant Business background	Day	Thu	No	No
NUS Business School	BSP3001B	Strategic Management	Both Biz and non-Biz alumni	Should have relevant Business background	Day	Mon Tue	No	No
NUS Business School	BSP3001C	Strategic Management	Both Biz and non-Biz alumni	Should have relevant Business background	Day	Thu	No	No
NUS Business School	DAO1704X	Decision Analytics using Spreadsheets	Suitable for non-Biz alumni	Should have basic Excel Spreadsheet skills	Evening	Tue	Yes	Yes
NUS Business School	DSC4217	Business Analytics with R	Suitable for Biz alumni	Should have relevant background	Day	Fri	No	No
NUS Business School	FIN2004X	Finance	Suitable for non-Biz alumni	Should have read ACC1002 / ACC1002X / ACC1701 / ACC1701X or equivalent	Day	Tue	No	Yes
NUS Business School	FIN3118	Financial Risk Management	Suitable for Biz alumni	Should have Finance background	Day	Mon Wed	No	No
NUS Business School	FIN4113	Personal Wealth Management	Both Biz and non-Biz alumni	Should have Finance background	Evening	Tue	Yes	No

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NUS Business School	MKT2413	Marketing Research	Both Biz and non-Biz alumni	Possess basic understanding of principles of marketing	Day	Thu	No	No
NUS Business School	MKT4413	Pricing Models and Strategy	Suitable for Biz alumni	Possess basic understanding of principles of marketing	Day	Tue	No	No
NUS Business School	MNO3332	Leading Groups and Teams	Suitable for Biz alumni	Should have relevant background	Day	Thu	No	No
NUS Business School	MNO4313D	Corporate Entrepreneurship	Both Biz and non-Biz alumni	Should have relevant background	Day	Fri	No	No
NUS Business School	TR2201	Entrepreneurial Marketing	Suitable for non-Biz alumni	Possess basic understanding of principles of marketing	Evening	Mon	Yes	Yes
Research Institute (ALSET)	ALS1010	Learning to Learn Better	Through our course, learners will critically assess their own learning strategies, evaluate proposed learning techniques, and formulate their individual learning strategies to help them learn more effectively, at work, studies, or pick up a skill. These techniques and knowledge acquired will encourage autonomous learning, foster self-discovery, and create new insights through the synthesis of new formulations developing different approaches to help students prepare to be effective self-directed lifelong learners.	Priority will be given to those who interacts with youths and children	Evening	Wed	AUDIT ONLY	No
SCALE	TCN1422	Materials for Chemical Engineers	This is a foundation module. Fundamental principles of materials science, which include basic structural chemistry and crystal structures, will be introduced. Typical properties of materials, which include structure imperfection and diffusion, mechanical properties, thermal behavior, electrochemical corrosions, and phase diagrams of metals will be covered. The third part describes structural characteristics of materials including ceramic, metallic, polymeric and composite materials. The last part gives a general introduction to more physically related properties, namely electrical and optical properties as well as the environmental aspects of structural materials selection.	Preference will be given to those with relevant disciplines	Evening	Mon	Yes	Yes
SCALE	TEE2002	Engineering Mathematics II	This is a follow up module for TE2102. The topics include the following: Vector algebra. Vector function. Directional derivatives. Divergence and curl of vector fields. Line, surface and volume integrals. Jacobian. Gauss' and Stokes' Theorem. Cartesian, cylindrical and spherical coordinates. Partial Differentiation. Partial differential equations. Curve Fitting.	Priority will be given to those with relevant Engineering or Science degree	Evening	Wed	Yes	Yes
SCALE	TEE2003	Advanced Mathematics for Engineers	This is a follow up module for TE2002. The topics include the following: complex functions, complex differentiation, Cauchy-Riemann equations, singularities and zeros, contour integration, conformal mapping; probability, random variables, probability density function, distributions, applied statistics, random process, responses of linear systems to random inputs.	Priority will be given to those with relevant Engineering or Science degree	Evening	Wed	Yes	Yes

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SCALE	TEE3104	Intro to RF and Microwave Sys & Circuits	Wireless communication and sensing systems play an ever increasing role in society. This module introduces the RF and microwave hardware systems and circuits. The applications include: GSM/CDMA, RFID, UWB, WLAN, Bluetooth, Zigbee, Radar and remote sensing	Priority will be given to those with relevant Engineering or Science degree	Evening	Tue	Yes	Yes
SCALE	TEE3501	Power Electronics	Power electronics forms an integral part of all electronics equipment from household appliances through information technology to transportation systems. This module develops the working knowledge, the foundation theory for generic power electronic circuits and the principles of their design. At the end of this module the student should be able to analyze and evaluate and carry out basic design of power electronics system for a large spectrum of applications. The topics covered are: Power semiconductor switches and characteristics. AC-to-DC converters and their performance. DC-to-DC converters: analysis and performance. Switching circuits design and protection.	Priority will be given to those with relevant Engineering or Science degree	Evening	Fri	Yes	Yes
SCALE	TEE4112	High Frequency (HF) Techniques	Radio and microwave systems rely on efficient transmission and distribution of electromagnetic (EM) energy. Radio and microwave systems need to be immune from external EM interference and need to ensure that they do not cause interference of their own. To achieve these requirements, microwave and radio engineers need to be able to specify and design wave-guiding systems, shielding and antennas. Topics covered: Guided waves: guiding elements and cavities. Scattering parameters. Directional couplers and hybrids. Circulators and isolators. Antenna parameters. Wire antennas. Electromagnetic interference and shielding.	Priority will be given to those with relevant Engineering or Science degree	Evening	Thu	Yes	Yes
SCALE	TEE4210	Computer Communications Networks II	The course will enable students to know the basics and theories of Internet-related technologies which offer the background knowledge & skills required for computer or network engineers. Contents covered include Internet Architecture & client/server applications, Client & Server Computing, Internetworking concepts & Architectural Model, Transport protocols: UDP/TCP, TCP/IP socket programming, Routing protocols, Domain Name System, Mobile IP, and Next Generation IP.	Priority will be given to those with relevant Engineering or Science degree	Evening	Mon	Yes	Yes

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SCALE	TIE2130	Quality Engineering I	This module introduces students to the fundamental concepts of quality and basic techniques in quality engineering. The topics covered are measures and interpretation of variation, control charts, process capability analysis, and acceptance sampling. The module will also deal with some related issues such as, measurement systems analysis, PDCA, TQM, and industrial case studies.	Priority will be given to those with relevant Engineering or Science degree	Evening	Mon	Yes	Yes
SCALE	TIE2140	Engineering Economy	This module introduces the concept of "the time-value of money" and the effect that it has on economic decisions in engineering and business. It equips the students with a conceptual framework for understanding and evaluating economic alternatives represented as a set of cash flows over time. Topics covered include cash flow analysis, choice among economic alternatives, effects of depreciation and taxation, replacement analysis, and dealing with risk and uncertainty.	Priority will be given to those with relevant Engineering or Science degree	Evening	Fri	Yes	Yes
SCALE	TIE4220	Supply Chain Modelling	This course introduces the fundamentals of supply chain concepts. It covers issues and <u>basic</u> techniques of distribution strategies, transportation logistics and supply chain network optimisation models. Students are equipped with fundamental concepts and quantitative tools that are essential to solving logistics and supply chain problems.	Priority will be given to those with relevant Engineering or Science degree	Evening	Wed	Yes	Yes
SCALE	TIE4230	Quality Engineering II	Description Design-in quality versus process control. Quality function deployment. Failure mode and effects analysis. Fractional factorial designs. Confounding. Robust design. Reliability analysis and testing.	Priority will be given to those with relevant Engineering or Science degree	Evening	Tue	Yes	Yes
SCALE	TME2114	Mechanics of Materials II	This course provides for a further understanding of concepts and principles of solid mechanics and its applications to engineering problems. The topics covered are: Two-dimensional systems; Combined stresses; Energy methods; Columns; Experimental stress analysis; Inelastic behaviour.	Priority will be given to those with relevant Engineering or Science degree	Evening	Mon	Yes	Yes

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SCALE	TME2143	Sensors and Actuators	Primarily a core subject for mechanical engineering students, this course introduces the basic principles and characteristics of various sensors for the measurement of mechanical quantities such as position, velocity, acceleration, force, and temperature. Topics that are also introduced are actuators for achieving motion, primarily various types of electric motors. This course also covers the generalised measurement and instrumentation system, the associated electronics, drivers and power supplies for the processing of the signals from the sensors and transducers and for driving the various actuators. Emphasis is placed on the knowledge required for the application of these sensors and actuators rather than on their design.	Priority will be given to those with relevant Engineering or Science degree	Evening	Thu	Yes	Yes
SCALE	TME3122	Heat Transfer	This course covers the key concepts related to the different modes of heat transfer (conduction, convection and radiation) and principles of heat exchangers. It develops the students' proficiency in applying these heat transfer concepts and principles, to analyse and solve practical engineering problems involving heat transfer processes. Topics include introduction to heat transfer; steady state heat conduction; transient heat conduction; lumped capacitance; introduction to convective heat transfer; external forced convection; internal forced convection; natural/free convection; blackbody radiation and radiative properties; radiative exchange between surfaces; introduction to heat exchangers and basic calculation of overall heat transfer coefficient.	Priority will be given to those with relevant Engineering or Science degree	Evening	Tue	Yes	Yes
SCALE	TME3241	Microprocessor Applications	Module will show how the microprocessor/microcomputer is applied as the brain in an intelligent mechatronic system. Major topics include: Basic operations of the microprocessor; Introductory assembly language programming; High-level language programming; Basic interfacing with external devices and working with real-time devices. Upon successful completion, students will be able to have the confidence to design and implement smart products and systems, including intelligent robotic devices and machines, and intelligent measurement systems. This is a technical elective for <u>mechanical engineering students</u> in their third year of study.	Priority will be given to those with relevant Engineering or Science degree	Evening	Fri	Yes	Yes

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SCALE	TME3251	MATERIALS FOR ENGINEERS	This module equips students with basic knowledge in materials selection for mechanical design. The major topics are: Classification of engineering materials; Materials properties in design using case studies; Ferrous alloys (carbon and low-alloy steels, tool steels, stainless steels, cast irons); Non-ferrous alloys (Cu-, Al-, Mg-, Ti-, Zn-, Ni-alloys, etc.); Engineering plastics and composites; Engineering ceramics; Surface engineering and coating techniques; Joining processes; Material selection in design; Product costing and case studies. The module is aimed at students who want to specialise in mechanical product design.	Priority will be given to those with relevant Engineering or Science degree	Evening	Tue	Yes	Yes
SCALE	TME4262	Automation In Manufacturing	This module provides a comprehensive introduction to automation technologies applied in discrete part manufacturing. It also introduces essential principles and provides analytical tools for manufacturing control. Major topics covered include: Economic justification of automated systems; Fixed and transfer automation; Automated material handling and automated storage/retrieval systems, Flexible manufacturing systems, Internet-enabled manufacturing, Group technology, Process planning, Automated assembly and automated operation planning for layered manufacturing processes.	Priority will be given to those with relevant Engineering or Science degree	Evening	Tue	Yes	Yes
SCALE	TTG1401	Engineering Mathematics I	This module builds and exposes students to the mathematical foundational concepts that are necessary in a variety of engineering disciplines. The topics include the following: Ordinary differential equations. Laplace transform. Matrix algebra. Vector Space. Eigenvalues and Eigenvectors. Determinants and Inverses. Solution of linear equations. Diagonalisation. Functions of Matrices. Matrix exponential. Matrix differential equations.	Priority will be given to those with relevant Engineering or Science degree	Evening	Thu	Yes	Yes
School of Computing	CS1010X	Programming Methodology	Opportunity for individuals who are keen to learn programming or switch to a software development role	Bachelor degree (excluding Computing) H2 pass in Computing or Mathematics or Physics; OR a good pass in H1 Mathematics	Online+ Physical tutorials	Online	No	Yes
School of Computing	CS4215	Programming Language Implementation	Students can upgrade their computing knowledge in software engineering	Bachelor degree relating to computing	Evening	Fri	No	Yes
School of Computing	CS4220	Knowledge Discovery Methods in Bioinformatics	Students can upgrade their computing knowledge in data mining with applications in bioinformatics	Bachelor degree relating to computing	Day	Thu	No	Yes
School of Computing	CS4221	Database Applications Design and Tuning	Students can upgrade their computing knowledge in database	Bachelor degree relating to computing	Evening	Fri	No	No
School of Computing	CS4225	Massive Data Processing Techniques in Data Science	Students can upgrade their computing knowledge in database	Bachelor degree relating to computing	Day	Fri	No	No

Note:

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Lifelong Learning Initiative for NUS Alumni: List of modules offered for Sem. 2, AY2017/18

Faculty / School	Module Code	Module Title	Suitability of the Module for this Initiative	Preferred / Recommended Entry Pre-requisite(s)	Time-tabling (Day / Evening Class)	Class Schedule (What Day?)	Can be done on AUDIT basis?	Final Exam (Yes/ No)
School of Computing	CS4242	Social Media Computing	Students can upgrade their computing knowledge in social media computing	Bachelor degree relating to computing	Evening	Mon	No	Yes
School of Computing	CS5250	Advanced Operating Systems	Students can upgrade their computing knowledge in operating systems	Bachelor degree relating to computing	Evening	Fri	No	Yes
School of Computing	IS4100	IT Project Management	Opportunity for individuals who are keen to upgrade their computing skill/knowledge	Bachelor degree relating to computing	Day	Mon	No	No
School of Computing	IS5111	Integration of IS and Business	Opportunity for individuals who are keen to upgrade their computing skill/knowledge	Bachelor degree relating to computing	Evening	Tue	No	Yes
School of Computing	IS5116	IT and Entrepreneurship	Opportunity for individuals who are keen to upgrade their computing skill/knowledge	Bachelor degree relating to computing	Evening	Mon	No	No
School of Computing	IS5120	Information Technology Policies	Opportunity for individuals who are keen to upgrade their computing skill/knowledge	Bachelor degree relating to computing	Evening	Tue	No	Yes
School of Computing	IS5128	Organising for IT Innovation	Opportunity for individuals who are keen to upgrade their computing skill/knowledge	Bachelor degree relating to computing	Evening	Fri	No	Yes
School of Design and Environment	PM5101	Project Management	Suitable for candidates who are involved in project management in different disciplines eg. construction, development, shipbuilding.	Nil	Evening	Fri	No	Yes
Yong Loo Lin School of Medicine	GET1022	Understanding Your Brain	Suitable for those wanting to (1) develop a basic understanding of the brain structure and function in health and diseases, (2) understand how neuroscience tools help to unravel the working of the brain, (3) develop an understanding of the social and ethical issues raised by developments in neurotechnologies, (4) develop and practise critical skills relevant to the analysis of controversies, (5) develop and practise skills relevant to conducting research and writing on controversial issues concerning science and society.	Nil	Day	Wed & Fri 3-5pm	Yes	Yes
NUS	GER1000 <i>New!</i>	Quantitative Reasoning	This module aims to equip students with basic reasoning skills on using data to address real world issues. What are some potential complications to keep in mind as we plan what data to collect and how to use them to address our particular issue? When two things are related (e.g. smoking and cancer), how can we tell whether the relationship is causal (e.g. smoking causes cancer)? How can quantitative reasoning help us deal with uncertainty or elucidate complex relationships? These and other questions will be discussed using real world examples.	Nil	Evening	Online lectures on IVLE. Physical Tutorials.	No	Yes

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NUS	GEQ1000 <i>New!</i>	Asking Questions	There are many ways to ask questions, and many kinds of questions that different disciplines investigate. For a start, this module introduces six dominant modes of questioning from the perspective of computational thinking, design thinking, engineering, philosophy, science, and social sciences. These six perspectives serve as a starting point to introduce all undergraduate students to different modes of questioning across these disciplines, and provide an initial exposure to how scholars from these disciplines pursue specific lines of questioning of everyday issues. We emphasize that while there is only limited time and space within one module to devote to specific disciplinary lines of investigations, we encourage all students to actively think about other lines of questioning, other questions that need to be asked, particularly in disciplines not represented in this introductory platform as we move through this journey together. We expect that in future subsequent offerings, other disciplinary modes of investigations may also be introduced.	Nil	Evening	Online lectures on IVLE. Physical Tutorials.	No	No Exam CS/CU basis

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