Science Education Paves Way for Emerging Solutions to Societal and Global Challenges

For more than half a century, **The Faculty of Science at The Chinese University of Hong Kong** has toiled relentlessly to achieve excellence in education and research. In an effort to ensure that the emerging needs of society and the world for fundamental sciences talents and discoveries are met, the Faculty will introduce new programmes in a timely manner. For 2022 entry, the Faculty of Science is pleased to offer a number of exciting new multi-discplinary programmes. First of all, the Faculty will be training young scientific leaders in tackling pressing global issues to do with the environment and climate via the **Earth and Environmental Sciences Programme (EESC JS4648)**. With a view of nurturing talented students with a vision of building a career in biotechnology entrepreneurship, business analysis, and/or healthcare management to capture emerging opportunities in these areas, the Faculties of Science, Medicine, and Business Administration have joined hands to offer the **Biotechnology, Entrepreneurship, and Healthcare Management Programme (BEHM JS4725).** The Faculties of Science and Engineering will also endeavour to train students in the **Computational Data Science Programme (CDAS JS4416)** in the building of intelligent systems to understand, interpret, manage, and drive key knowledge, so that robust data-driven decision-making is possible, with widespread applications in academia, industry, and greater society. Meanwhile, **Learning Design and Technology Programme (LDTE JS4386)** is an innovative take on the cross-section of education, science, and technology undertaken by the Faculties of Science, Education, and Engineering for birthing next-generation learning technology specialists to become trailblazers for enhanced learning environments and outcomes. Learn about these new exciting programmes and other offerings from CUHK Faculty of Science at the CUHK Information Day for Undergraduate Admissions 2021, to be held virtually on Saturday, 16 October.

The pursuit of knowledge knows no bounds, and with the accumulation of new insight and with society facing ever challenging issues, science education must be able to keep up with the changing times. CUHK Faculty of Science is keen to serve as a leader in the nurturing of the next generation of talents for society, and we are pleased to introduce the all-new **Earth and Environmental Sciences Programme (EESC JS4648)** for 2022 entry. This programme will equip students with the latest knowledge and technical skills to observe, understand, analyse, and model the systems and processes that drive natural and anthropogenic global environmental changes. Curriculum has been designed on an innovative multidisciplinary manner, combining theoretical observational approaches to grapple with pressing issues such as global climate change, environmental pollution, loss of biodiversity, natural hazards, and food and energy crises, and formulate potential solutions. Students will also have the option of specialising in three streams, namely Atmospheric Science, Geophysics, and Environmental Science and Technology, to suit their background, interests and career objectives. Course studies can be supplemented by exchange studies and internships so that upon graduation, students will be well prepared for work in the government, NGOs, various industries, as well as further studies or careers in the educational sector.

The intersection of biomedical sciences, business and administration, molecular biotechnology, and Public Health presents tremendous potential for aspiring students to embark on a journey of linking biotechnological and biomedical knowledge with applications of sound scientific knowledge to society and the business world, complemented with sense and skills in entrepreneurship and healthcare management. The **Biotechnology, Entrepreneurship, and Healthcare Management Programme (BEHM JS4725)** will develop students with a broad base of complementary knowledge, to equip them with an entrepreneurial mindset with innovative ideas to translate advancements of biotechnology, biomedical sciences, and healthcare into commercial opportunities and provide cross-disciplinary solutions. Moreover, graduates of the programme will be capable of communicating with collaborators of diverse backgrounds and contribute in the management of healthcare operations and development. Opportunities of mentorships and internships from the relevant industrial, services, and venture capital sectors will allow students to apply their knowledge to real-world problems and situations, preparing them to meet emerging opportunities in Hong Kong, the Greater Bay Area, and beyond.

In the digital age, human and automated activities continuously generate vast amounts of data that is stored and potentially powerful in designing data-driven solutions for analysing and reasoning massive amounts of information. **Computational Data Science Programme (CDAS JS4416)** is designed train students to manufacture mathematical, technical, and analytical skills to create such solutions that lead data-driven decision making. Students will be equipped with the much-coveted capabilities of applying both high-performance parallel and distributed computing for big data manipulation and data-driven statistical procedures, methodologies and theories for mining patterns, making predictions, and discovering sciences from large and complex datasets. Three specialised streams are offered for students to choose based on their interests and aspirations: computational physics, computational medicine, and computational social science. Graduates of this programme would have built solid foundations of data structures and algorithms, parallel and distributed computing system programming, statistical modelling and analysis, as well as large-scale statistical inference.

A new integrative, multi-disciplinary programme leveraging on a collaborative training in education, science, and engineering technology will equip learners with knowledge, competencies, and leadership to facilitate learning and development in and beyond formal education settings. **Learning Design and Technology Programme (LDTE JS4386)** is an innovative programme where the curriculum is theory-driven, action-science oriented, and with a lab-based learning approach. The curriculum features integrated STEM education with technology-based and multimedia instruction in multicultural contexts so that graduates would be prepared to apply their acquired theoretical knowledge and practical experience in a wide range of contexts and settings, with internship opportunities to solidify the integration of theory with practice.

The Faculty of Science at The Chinese University of Hong Kong was established in 1963, and currently has six major teaching units (School of Life Sciences, Department of Chemistry, Department of Mathematics, Department of Physics, Department of Statistics, and Earth System Science Programme) offering a broad range of undergraduate and postgraduate programmes. These programmes are designed to provide a liberal arts education by combining rigorous natural sciences and mathematics courses with fundamental liberal arts subjects. Our graduates are well received by the local and international communities, with many of them continuing to pursue successful graduate studies at local and international universities. The Faculty is guided by 400 teaching and research staff, a number of which have received recognition and distinction from their respective fields of science, including a Nobel laureate, Fields medallist, and Academicians of the Chinese Academies of Sciences and Engineering. In the latest Research Assessment Exercise (RAE 2020), the research performances of various disciplines at the Faculty were rated once again as achieving "world-leading" standard, an honour garnered by the Faculty since 2014.

For further information about CUHK Science, please visit: www.sci.cuhk.edu.hk.

For information about CUHK Information Day for Undergraduate Admissions 2021, please visit: www.cuhk.edu.hk/infoday.

New programmes to be introduced in 2022-23 are subject to confirmation of the University Senate.

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