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Scientific Computation Programme Introduced at HKUST

A new programme in scientific computation will be introduced by the Mathematics Department of the Hong Kong University of Science & Technology this coming autumn. The undergraduate programme reflects the growing importance of scientific computation in science and engineering and will be the only one of its kind in Hong Kong.

"Scientific computation has become a third approach, other than experimental and theoretical approaches, to study science and technology over the past two decades," said Professor W H Hui of the Department of Mathematics at HKUST. "For instance, it is now a standard practice in the aircraft industry to use computational fluid dynamics for the design of an aircraft."

"Students will acquire the ability to design and apply computational algorithms to solve a substantial problem in science or engineering," said Dr Y K Kwok, lecturer in the Department of Mathematics at HKUST. "The design of numerical algorithms requires intensive training in mathematics--in particular, partial differential equations and numerical analysis--while the actual computation demands basic knowledge of computers and computing."

"We strongly believe that our graduates in this programme will receive good training and be well sought after in the job market," Dr Kwok added.

Students enrolled in the BSc programme will take about 10 courses in mathematics and 5 courses in computer science. In addition, a student must take 2 to 3 courses in one chosen area of specialization in science or engineering, such as fluid mechanics, structural dynamics, theoretical chemistry, mathematical biology, etc.

To gain a taste of how scientific computation can be applied to real problems, students in the programme are required to complete a scientific computation project in the chosen area of specialization, carrying 9 credits in their third year of study.

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