

The discovery lab

創意實驗室

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Space always comes at a premium in Hong Kong, and a designated area where you can test out your own ideas with state-of-the-art equipment is a precious concept.

The Gateway Education (GE) Discovery Laboratory, due to open later this year, will provide CityU students with such an environment. This purpose-built, multi-function wet lab will provide facilities for up to 30 students at any one session to develop innovative ideas as part of their GE courses.

Managed by the Office of Education Development and Gateway Education (EDGE), the lab will house a rapid prototyping machine and a 3D scanner, enabling students to transform digital designs and models, for instance, into physical objects.

There will also be a soundproof “show and tell” studio where students can showcase their discoveries, display them online and practice their communication skills. And quiet rooms and mobile work benches can be shifted around to provide more space or to alter the dynamics of the learning ambiance. Two dedicated engineers will be on-site to provide vital technical support.

“Discovery is about building on something that already exists and making it new in some way,” said Professor Cheng Shuk Han, the Director

of EDGE and a professor in the Department of Biology and Chemistry. “We believe the equipment we have planned for the lab will let students experience the thrill of seeing their ideas come to life.”

The lab will be much sought after by students taking GE courses in the new 4-year curriculum. To graduate, students need 25% of their credits to come from interdisciplinary GE courses, but not all students have easy access to laboratories on campus. This additional lab will complement the existing labs in the College of Science and Engineering (CSE), the language labs and the brand new facilities in the new Run Run Shaw Creative Media Centre.

EDGE manages several initiatives that support this new curricular focus of discovery and innovation. “Our role is to engage the campus in discussions and provide pedagogical suggestions in support of the new Discovery-enriched Curriculum (DEC),” explained Professor Cheng, who has won many innovation awards at international exhibitions, including the Gold Medal at the 35th International Exhibition of Inventions, New Techniques and Products of Geneva in 2007, and several gold and special awards from the Korean International Women’s invention Expositions since 2009.

“We are here to find out what staff want and what they need to embed in their courses and programmes for students to discover and innovate,” she continued. “We provide food for thought by looking at GE in holistic terms.”

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At the end of last year, EDGE hosted a series of institution-wide events aimed at building consensus on the varied aspects of the DEC. Two DEC-implementation workshops were held in November for associate and assistant deans to share ideas about the DEC with programme leaders. Additional sessions were held for Fulbright scholars to discuss how different aspects of discovery have been implemented in their own courses at their home institutions.



The Fulbright scholar associated with EDGE, Professor Martha Carothers, a book artist experienced in general education at the University of Delaware, is acting as a consultant on EDGE teaching and learning projects, while the General Education Course Evaluation Panel (GEEP) coordinators facilitate the launch and implementation of the GE curriculum.

“The new discovery lab is just one way we are working with faculty to integrate the DEC into the undergraduate programmes, and we are very excited about the projects that the students will be working on and the discoveries that wait to be made. This new GE Discovery lab will provide a venue for students from non-CSE departments to get their hands wet and transform their dream design into prototypes,” Professor Cheng said. ●

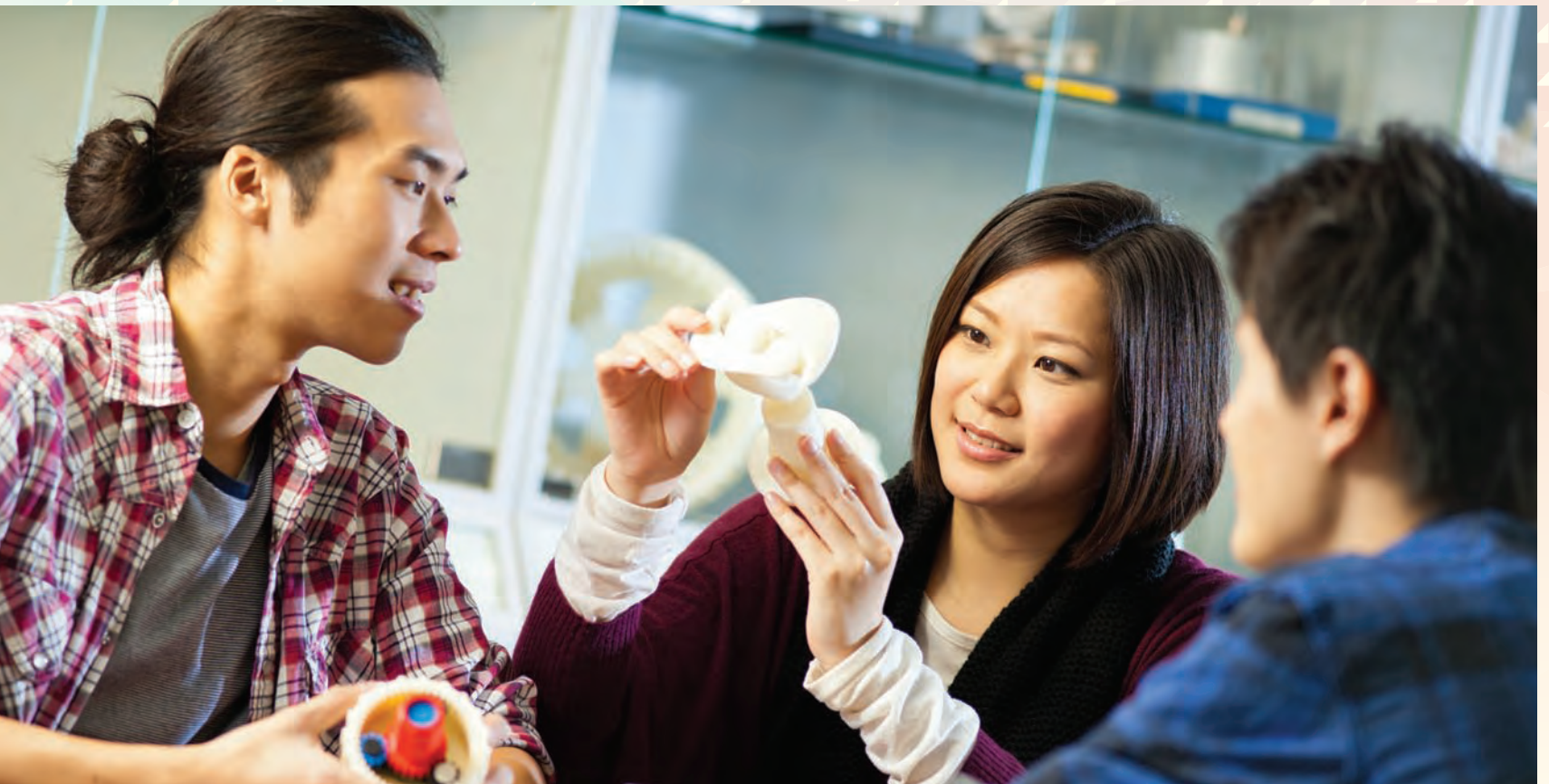
城大將成立一所多功能的「精進教育探索實驗室」，配有最先進的設備，專供學生測試並發揮自己的創新意念。該實驗室將成為修習精進教育課程的一環，於今年內啓用，可同時容納30名學生；在寸土寸金的香港，營造如此激發創意的環境，可謂難能可貴。

該實驗室由教育發展及精進教育處管理，配備了快速原型機和三維掃描儀，學生可使用這些設備把數碼設計與數碼模型轉換成實體物件。

實驗室還有一個隔音的展示室，供學生展示自己的發現，在網上作演示，並練習溝通技巧。另有幾個靜室，內有可自由移動的工作台，以擴大學習的空間，或變動其中的配置。有兩位專職工程師在場協助，提供關鍵的技術指導。

「所謂發現，就是利用既有的事物，以某種方式推陳出新，」教育發展及精進教育處處長、生物及化學系教授鄭淑嫻教授說。「我們相信，我們為實驗室籌劃的設備，將使學生得以目睹自己的意念變成實物，體驗由此產生的興奮之情。」

新的四年學制施行後，這個實驗室將會成為修讀精進教育課程學生的熱門場所。學生要完成學業，就必須在跨學科的精進教育課程中獲得畢業所需的四分之一學分。校內現有的實驗室包括科



學及工程學院各實驗室、語言實驗室，以及配有全新設備的邵逸夫創意媒體中心，但難以供全體學生使用。新增的這所精進教育探索實驗室，可以彌補不足。

教育發展及精進教育處負責的幾項措施，均旨在推行重探索求創新的新課程。鄭教授解釋說：「我們的職責是促使城大師生集思廣益，提議各種教學法，以支持重探索求創新課程。」鄭教授曾榮獲多項國際展覽的創新獎，例如第35屆日內瓦國際發明及創新技術與產品展覽金獎，以及從2009年至今韓國國際婦女發明展的多項金獎。

「我們須了解教師需要些什麼，課程及科目裏需要包含什麼，才會令學生有機會去發現、去創新，」她說。「我們從全局的角度看待精進教育課程，啓發大家思考。」

為了讓大家對「重探索求創新課程」的各個方面取得共識，教育發展及精進教育處去年年底主辦了一系列重要的全校活動。該處於11月推出兩場工作坊，邀請副院長、助理院長和課程主任一起討論如何施行「重

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探索求創新課程」，隨後又增辦多場工作坊，邀請城大多位富布萊特訪問學人討論他們在本國高等院校如何將探索創新的元素注入課程之中。

富布萊特訪問學人、製書藝術家Martha Carothers教授擔任該處的教學項目顧問，她曾於美國特拉華大學推行通才教育，經驗豐富。另外，精進教育課程評估小組的統籌人員亦協助啓動和推行精進教育課程。

「我們正在與教師合作，要將重探索求創新課程融入本科生的課程，這所新的探索實驗室僅是合作的途徑之一，」鄭教授說。「對於學生將要做的項目、未來的新發現，我們充滿期待。新增這個精進教育探索實驗室，使科學及工程學院之外的學生也有親自動手做實驗的場地，把夢想的設計轉化為實物雛形。」

