MEDIA RELEASE

SMU launches its first SkillsFuture Work-Study Degree to meet demand for software engineers

The new programme, with GovTech as its first anchor partner, will welcome its inaugural batch of 45 students in August 2022

Singapore, 1 March 2022 (Tuesday) – The School of Computing and Information Systems (SCIS) at the Singapore Management University will, from Academic Year 2022-2023 (which begins in August 2022), offer the University's first work-study degree in software engineering to train a pipeline of talent with the necessary knowledge and skills to meet the demand for such talent.

The Bachelor of Science (Software Engineering) SkillsFuture Work-Study Degree is a full-time, four-year undergraduate degree programme which combines classroom-learning with structured on-the-job training. It features a rigorous 52-week apprenticeship where students work in development teams under the mentorship of professional software engineers.

The collaboration with the programme's first anchor partner - Government Technology Agency of Singapore (GovTech) – was formalised with the signing of a Memorandum of Understanding by Professor Pang Hwee Hwa, Dean of SCIS, and Mr D N Prasad, Senior Director of Strategy, People & Organisation, GovTech.

Professor Pang said, "As the digitalisation of industries, economies and societies accelerate, we have seen strong interest from prospective students to study computing, as well as strong demand from industry and Singapore for computing talent. In response, the School of Computing and Information Systems has been increasing our student intake over the years. We have launched and refreshed our education programmes in response to emerging technologies and market demands in order to stay relevant to the industry. These include the BSc (Computer Science) in 2019 and the BSc (Computing & Law) in 2020.

"Our new BSc (Software Engineering) SkillsFuture Work-Study Degree aims to nurture undergraduates with a strong foundation in software engineering design and principles, competent programming skills and real-life hands-on industry experience. Collaboration with industry partners is part of our overall effort to nurture future-ready graduates who are able to create value to business and society with industry-relevant skills. We are delighted to have GovTech as our first anchor partner to deliver the new degree in software engineering. We are confident this collaboration will enable our students to gain invaluable experience in public sector digital transformation."

Mr Prasad said, "GovTech is pleased to partner SMU in offering the 52-week apprenticeship to undergraduates of the new work-study degree in software engineering. This presents a rare opportunity for the students to gain in-depth and first-hand experience through working on challenging and impactful government digitalisation projects. GovTech is a strong advocate in the development of young tech talent, and recruits over 200 interns each year. This partnership underscores our commitment in grooming the next generation of tech talent to drive Singapore's Smart Nation and Digital Government agenda."

SCIS will be working closely with our anchor partners to co-develop and co-teach the curriculum to ensure that our students are familiar with current trends and best practices in software engineering. Students of the programme will be equipped with technical, teamwork and communication skills to take on software engineering roles.

About the BSc (Software Engineering) SkillsFuture Work-Study Degree

With the pervasive use of technology across economy, society and polity, the demand for computing talent, including software engineers, has been increasing in Singapore and globally and is expected to remain high in the foreseeable future.

Singapore's standing as regional tech hub has attracted many technology companies to the city state, including some of the biggest Silicon Valley giants. This has resulted in a surge in demand for software engineers. According to a study by recruitment and manpower outsourcing firm BGC group last year, software developers are among the four most in-demand tech roles in both the public and private sectors in Singapore.

Highlights of the BSc (Software Engineering) SkillsFuture Work-Study Degree:

- **Strong industry collaboration**: The degree's curriculum is drawn up after extensive consultation with practising software engineers in Singapore and will be updated regularly to adhere to market trends. The courses will be co-developed and co-taught by SCIS faculty and practising software engineers from our anchor partners. In addition to GovTech, SCIS is looking to collaborate with other industry partners as well.

- **One-year apprenticeship**: Undergraduates of the BSc (Software Engineering) SkillsFuture Work-Study Degree will embark on a one-year apprenticeship, which is credit-bearing, after completing a suite of 12 compulsory courses covering essential software engineering skills. The courses are organised in three clusters: Computing Foundation, Software Development, and Solution Management.

  The apprenticeship aims to meet demand from prospective students who seek an applied IT degree with a significantly longer apprenticeship period than what a typical internship offers.

  The apprenticeship will allow them to learn industry best practices from subject matter experts and give them a head-start in their career. Working in development teams, the students will innovate software solutions under the mentorship of professional software engineers. They will be able to strengthen and broaden their technical and soft skills with hands-on experience, familiarise themselves with organisational work culture, and enhance their career opportunities with deep industry knowledge and personal professional network.

- **Term-in/term-out model**: At any given time, a student is either a full-time apprentice at work, or a full-time student taking courses at SMU.

- **Co-design of curriculum with anchor partner companies:** SCIS will work with a few anchor partner companies very closely. Besides taking in the bulk of the apprentices, we will work with senior software engineers from our partners to refine and evolve the curriculum.

  The core courses can be slightly tailored to the partner company's specific needs. For example, if a partner company is a financial institution, in-course projects can be contextualised with banking scenarios in order to familiarise students with domain knowledge.

- **Co-delivery of courses with anchor partner companies**: Partner companies will be invited to nominate senior software engineers to teach selected core courses as adjunct faculty.

- **Outcome of programme**: The curriculum has been designed so as to nurture well-rounded graduates equipped with full-stack development skills and software engineering principles for the design, development, testing and maintenance of software systems. Graduates are also expected to be well-versed in cybersecurity, clean coding, DevOps and modern agile software development methodologies, while possessing strong communication skills and ability to work productively in a software development team.

- **Prospective job roles**: Software engineer, software developer, software/IT analyst, programmer, software tester, DevOps engineer, software designer, IT solution architect, software architect.

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About School of Computing and Information Systems

Real-world industry sectors provide our School of Computing and Information Systems (SCIS) with a testbed and laboratory for experimentation, as well as a fertile breeding ground for new ideas. Our faculty and students apply their research results to solve real problems in a variety of industry settings and to create IT applications and systems. At the same time, our faculty actively publish in top-quality Computer Science and Information Systems conferences and journals. Our research areas include Cybersecurity; Data Management & Analytics; Human-Computer Interaction; Information Systems Management; Intelligent Systems & Optimisation; Machine Learning & Intelligence; Multimedia; Pervasive Sensing & Systems; Software Engineering & Systems.

SCIS offers a suite of degree programmes. Our BSc (Information Systems), BSc (Computer Science) and BSc (Computing & Law) have been remarkably successful in demonstrating educational innovations and

creating a culture of learning, establishing external linkages and partnerships with industry, government and the social sector, and with job placement. We run a highly ranked Master of IT in Business degree, with specialisations in Analytics; Artificial Intelligence; Digital Transformation; and Financial Technology & Analytics. Our doctoral degrees, including PhD (Computer Science), PhD (Information Systems) and Doctor of Engineering, have produced graduates who moved on highly sought organisations in academia and industry.

About Singapore Management University

A premier university in Asia, the Singapore Management University (SMU) is internationally recognised for its world-class research and distinguished teaching. Established in 2000, SMU's mission is to generate leading-edge research with global impact and to produce broad-based, creative and entrepreneurial leaders for the knowledge-based economy. SMU's education is known for its highly interactive, collaborative and project-based approach to learning.

Home to over 11,000 students across undergraduate, postgraduate professional and postgraduate research programmes, SMU comprises six schools: School of Accountancy, Lee Kong Chian School of Business, School of Economics, School of Computing and Information Systems, Yong Pung How School of Law, and School of Social Sciences. SMU offers a wide range of bachelors', masters', and PhD degree programmes in the disciplinary areas associated with the six schools, as well as in multidisciplinary combinations of these areas.

SMU emphasises rigorous, high-impact, multi- and interdisciplinary research that addresses Asian issues of global relevance. SMU faculty members collaborate with leading international researchers and universities around the world, as well as with partners in the business community and public sector. SMU's city campus is a modern facility located in the heart of downtown Singapore, fostering strategic linkages with business, government and the wider community. www.smu.edu.sg