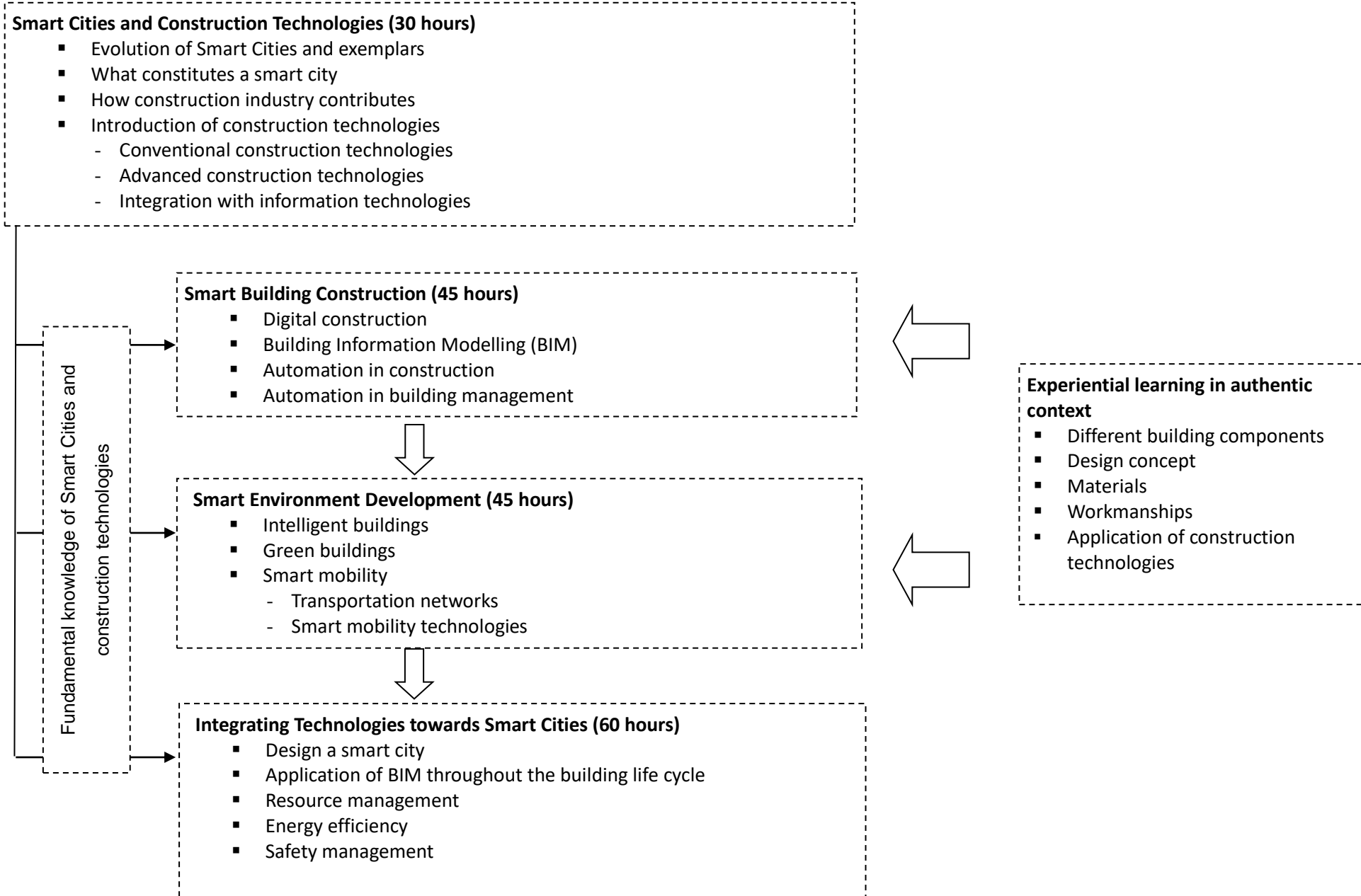


Applied Learning (Senior Secondary Level)

2020-22 Cohort

Item	Description
1. Subject Title	Constructing Smart Cities
2. Course Provider	School of Professional and Continuing Education, The University of Hong Kong
3. Area of Studies/ Course Cluster	Engineering and Production/ Civil, Electrical and Mechanical Engineering
4. Medium of Instruction	Chinese or English
5. Learning Outcomes	<p>Upon completion of the subject, students should be able to:</p> <ul style="list-style-type: none"> (1) explain fundamental concepts and important attributes of smart cities; (2) describe various conventional and advanced building technologies; (3) integrate construction technologies with relevant information technologies for constructing smart cities; (4) demonstrate problem-solving skills through tackling smart city related issues with multi-disciplinary knowledge; (5) appreciate the values and contributions of building and construction in modern cities; and (6) develop self-understanding for further studies and career development in the related field.

6. Curriculum Map – Organisation and Structure



7. The Context

- The information on possible study and career pathways is provided to enhance students' understanding of the wider context of the specific Applied Learning course. Students who have successfully completed Applied Learning courses have to meet other entry requirements as specified by the institutions.
- The recognition of Applied Learning courses for admission to further studies and career opportunities is at the discretion of relevant institutions. The Education Bureau and the course providers of Applied Learning are exploring and seeking recognition related to further education and career development opportunities for students successfully completing the Applied Learning courses.

Possible further study and career pathways

Further studies

- e.g. building services engineering, building construction, information technology and engineering

Career development

- e.g. assistant building engineer, BIM designer assistant, BIM modeler assistant, and building information specialist assistant



Relations with core subjects and other elective subjects

Enhancing and enriching,

- e.g.
- enhance students' learning in **Mathematics** by solving operational problems in smart city development
 - enhance students' learning in **Liberal Studies** by enriching their knowledge of globalisation

Cross-fertilisation, e.g.

- the application of knowledge and skills learnt in **Information and Communication Technology** (e.g. Information Processing) enhances the learning in both subjects

Expanding horizons, e.g.

- students taking **Personal, Social and Humanities Education** subjects can broaden their knowledge in building and information technology



Cluster of professions/trades/industries related to the course

- e.g. building services, building construction, information technology and engineering

Future global and local outlook

- In the Asia arena, the initiative of building smart cities is widely recognised and being realised in the Mainland, Singapore and other Southeast Asia countries. In the Mainland alone, there will be more than 100 new smart cities during 2016 to 2020
- The Government of the Hong Kong Special Administrative Region aims to build Hong Kong into a world class smart city, through adopting the measures set out in the Smart City Blueprint for Hong Kong. The vision of the plan is to "embrace innovation and technology to build a world-famed Smart Hong Kong characterised by a strong economy and high quality of living"
- It is anticipated that the development of smart cities will keep going, not only because smart cities will bring about a new style of living, but also enhance the national competitiveness by encouraging innovation and entrepreneurship, bringing about foreign investments, increasing efficiency and productivity, saving energies and minimising pollutions



Relations with other areas of studies/courses of Applied Learning

Business, Management and Law

- enhance students' understanding of the technology applications towards the smart city development

Beginners' skill set to facilitate entry to further studies and/or work

- understand fundamental knowledge and skills of constructing smart cities
- enhance problem-solving skills through tackling smart city related issues with multi-disciplinary knowledge
- appreciate the values and contributions of building and construction in modern cities
- understand the trend of the related industry and set up the individual plan for further studies and work



Foundation knowledge developed in junior secondary education and Secondary 4

The subject is built upon the foundation knowledge students acquired in, e.g.

- **Chinese Language Education** and **English Language Education** – verbal and written communication
- **Mathematics Education** – data handling, measures and calculations
- **Technology Education** – use of information technology
- **Science Education** – principle of force
- **Personal, Social and Humanities Education** – culture and its impact on living style