

PIA3525: BUILDING TECHNOLOGY AND SERVICES FOR HOUSING MANAGERS

New Syllabus Proposal

Effective Term

Semester B 2023/24

Part I Course Overview

Course Title

Building Technology and Services for Housing Managers

Subject Code

PIA - Public and International Affairs

Course Number

3525

Academic Unit

Public and International Affairs (PIA)

College/School

College of Liberal Arts and Social Sciences (CH)

Course Duration

One Semester

Credit Units

3

Level

B1, B2, B3, B4 - Bachelor's Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

None

Precursors

None

Equivalent Courses

None

Exclusive Courses

None

Part II Course Details

Abstract

This course aims to describe the major building technology and services installations and their performance in the functioning of a building. Major components of mechanical and electrical systems and their associated equipment, sub-systems of building services, basic construction materials, common defects of building fabrics and the rectification strategies will be described. Basics of decision-making processes of building improvement works and project management as well as terminologies associated with such systems and sub- systems are highlighted. Specified issues in life-cycle performance, energy conservation, safety and environmental concerns will be discussed.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Summarise the basic building forms and construction principles		x		
2	Critically appraise the common defects on the building fabrics and formulate suggestions for repairing or rectifying the building defects			x	
3	Identify the major building devices and functional building services installations				x
4	Describe the implications of building services on costing, safety, energy conservation and environmental issues			x	
5	Apply the knowledge acquired in this course in real-life problems				x

A1: Attitude

Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability

Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments

Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Teaching and Learning Activities (TLAs)

	TLAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lectures and seminars	Introduce basic knowledge with illustrations	1, 2, 3	
2	Group projects	A plan on a maintenance programme for a property	1, 2, 3, 4	
3	Presentation and discussion	Presentation of green building design concepts and management practices # # # #	1, 2, 3, 4	

4	Quizzes	Two one-hour quizzes on the concepts and applications	1, 2, 3	
---	---------	---	---------	--

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Group project	1, 2, 3, 4	40	
2	Presentation of group project	1, 2, 3, 4	20	
3	Quizzes	1, 2, 3	40	

Continuous Assessment (%)

100

Additional Information for ATs

If a course has both coursework and examination components, students are required to pass BOTH the coursework assessment AND the examination before they can be awarded an overall passing grade of the course.

Assessment Rubrics (AR)**Assessment Task**

Group project, presentation of group project

Excellent (A+, A, A-)

Demonstrate excellent ability in –

- Summarising the basic building forms and construction principles
- critically appraising the common defects on the building fabrics and formulate -suggestions for repairing or rectifying the building defects
- Identifying the major building devices and functional building services installations
- Describing the implications of building services on costing, safety, energy conservation and environmental issues;
- Applying the knowledge acquired in this course in real-life problems

Good (B+, B, B-)

Demonstrate good ability in –

- Summarising the basic building forms and construction principles
- critically appraising the common defects on the building fabrics and formulate -suggestions for repairing or rectifying the building defects
- Identifying the major building devices and functional building services installations
- Describing the implications of building services on costing, safety, energy conservation and environmental issues;
- Applying the knowledge acquired in this course in real-life problems

Fair (C+, C, C-)

Demonstrate adequate ability in –

- Summarising the basic building forms and construction principles
- Critically appraising the common defects on the building fabrics and formulate -suggestions for repairing or rectifying the building defects
- Identifying the major building devices and functional building services installations
- Describing the implications of building services on costing, safety, energy conservation and environmental issues;
- Applying the knowledge acquired in this course in real-life problems

Marginal (D)

Marginally Demonstrate the ability in –

- Summarising the basic building forms and construction principles

- critically appraising the common defects on the building fabrics and formulate -suggestions for repairing or rectifying the building defects
- Identifying the major building devices and functional building services installations
- Describing the implications of building services on costing, safety, energy conservation and environmental issues;
- Applying the knowledge acquired in this course in real-life problems

Failure (F)

Demonstrate no ability in –

- Summarising the basic building forms and construction principles
- critically appraising the common defects on the building fabrics and formulate -suggestions for repairing or rectifying the building defects
- Identifying the major building devices and functional building services installations
- Describing the implications of building services on costing, safety, energy conservation and environmental issues;
- Applying the knowledge acquired in this course in real-life problems

Assessment Task

Quizzes

Excellent (A+, A, A-)

Demonstrate excellent ability in –

- Summarise the basic building forms and construction principles
- Critically appraise the common defects on the building fabrics and formulate -suggestions for repairing or rectifying the building defects
- Identify the major building devices and functional building services installations
- Describe the implications of building services on costing, safety, energy conservation and environmental issues;

Good (B+, B, B-)

Demonstrate good ability in –

- Summarising the basic building forms and construction principles
- Critically appraising the common defects on the building fabrics and formulate -suggestions for repairing or rectifying the building defects
- Identifying the major building devices and functional building services installations
- Describing the implications of building services on costing, safety, energy conservation and environmental issues;

Fair (C+, C, C-)

Demonstrate adequate ability in –

- Summarising the basic building forms and construction principles
- Critically appraising the common defects on the building fabrics and formulate -suggestions for repairing or rectifying the building defects
- Identifying the major building devices and functional building services installations
- Describing the implications of building services on costing, safety, energy conservation and environmental issues;

Marginal (D)

Marginally demonstrate ability in –

- Summarising the basic building forms and construction principles
- Critically appraising the common defects on the building fabrics and formulate -suggestions for repairing or rectifying the building defects
- Identifying the major building devices and functional building services installations
- Describing the implications of building services on costing, safety, energy conservation and environmental issues;

Failure (F)

Demonstrate no ability in –

- Summarising the basic building forms and construction principles

- Critically appraising the common defects on the building fabrics and formulate -suggestions for repairing or rectifying the building defects
- Identifying the major building devices and functional building services installations
- Describing the implications of building services on costing, safety, energy conservation and environmental issues;

Part III Other Information

Keyword Syllabus

Construction materials (e.g. reinforced concrete, timber, etc); functional elements (e.g. door; window, wall, ceiling, floor, finishes, roof, etc); building diagnosis (e.g. condition survey, repair and maintenance, maintenance management, maintenance strategy, environmental performance, building illegality, unauthorised building works etc); Building services (e.g. water supply, drainage, natural and mechanical ventilation, air-conditioning, fire protection, electrical installations, vertical and horizontal transportation, lighting, etc); principles of integration of building services in tall buildings (e.g. energy efficiency, energy audit, etc).

Reading List

Compulsory Readings

Title	
1	Wordsworth, P. (2001). Lee' s Building Maintenance Management. Oxford: Blackwell Science.
2	Allen, E. & Iano, J. (2014). Fundamentals of Building Construction: Materials and Methods. Hoboken: John Wiley & Sons.
3	Barney, G. & Al-Sharif, L. (2016). Elevator Traffic Handbook: Theory and Practice. Abingdon: Routledge.
4	Butcher, K. (Ed.) (2010). Transportation Systems in Buildings. London: Chartered Institution of Building Services Engineers.
5	Chanter, B. & Swallow, P. (2007). Building Maintenance Management. Oxford: Blackwell.
6	Charlett, A.J. & Maybery-Thomas, C. (2013). Fundamental Building Technology. Abingdon,
7	Ching, F.D.K. (2014). Building Construction Illustrated. Hoboken, Wiley.
8	Douglas, J. & Noy, E.A. (2011). Building Surveys and Reports. Chichester: Wiley-Blackwell.
9	Foley, J.M. (2014). Principles of Code Enforcement. Boston: Pearson.
10	Grondzik, W.T. & Kwok, A.G. (2015). Mechanical and Electrical Equipment for Buildings. Hoboken: Wiley.
11	Hall, F. (1994). Plumbing, Cold Water Supplies, Drainage and Sanitation. Harlow: Longman.
12	Hall, F. & Greeno, R. (2013). Building Services Handbook. London: Routledge.
13	Marshall, D., Worthing, D., Heath, R. & Dann, N. (2014). Understanding Housing Defects. Abingdon: Routledge.
14	Portman, J. (2014). Building Services Design Management. Chichester: Wiley Blackwell.
15	Randall, M. (2012). Environmental Science in Building. Houndmills: Palgrave Macmillan. Routledge.

Additional Readings

Title	
1	Buildings Department. (2002). Building Maintenance Guidebook. Hong Kong: Buildings Department.
2	Buildings Department. (2010). Technical Guidelines on Minor Works Control System. Hong Kong: Buildings Department.
3	Buildings Department. (2011). Code of Practice for Fire Safety in Buildings 2011. Hong Kong: Buildings Department.
4	Buildings Department. (2011). Code of Practice for the Structural Use of Steel 2011. Hong Kong: Buildings Department.

5	Buildings Department. (2012). Code of Practice for the Mandatory Building Inspection Scheme (MBIS) and the Mandatory Window Inspection Scheme (MWIS) 2012. Hong Kong: Buildings Department.
6	Buildings Department. (2013). Code of Practice for Structural Use of Concrete 2013. Hong Kong: Buildings Department.
7	Buildings Department. (2015). Code of Practice for Fire Safety in Buildings 2011. Hong Kong: Buildings Department.
8	Electrical and Mechanical Services Department. (2015). Code of Practice for the Electricity (Wiring) Regulations (2015 Edition). Hong Kong: Electrical and Mechanical Services Department.
9	Electrical and Mechanical Services Department. (2018). Code of Practice for Energy Efficiency of Building Services Installation. Hong Kong: Electrical and Mechanical Services Department.
10	Electrical and Mechanical Services Department. (2018). Code of Practice for Lift Works and Escalator Works. Hong Kong: Electrical and Mechanical Services Department.
11	Hong Kong Institute of Surveyors. (2009). Guide to Prepare a Building Maintenance Manual. Hong Kong: Hong Kong Institute of Surveyors.
12	Water Supplies Department (2019). Technical Requirements for Plumbing Works in Buildings. Hong Kong: Water Supplies Department.