



## UNIVERSITI TEKNOLOGI MARA

### BCT413: INTRODUCTION TO BUILDING SERVICES

<b>Course Name (English)</b>	INTRODUCTION TO BUILDING SERVICES <b>APPROVED</b>
<b>Course Code</b>	BCT413
<b>MQF Credit</b>	3
<b>Course Description</b>	The general aims of the course is to provide sufficient knowledge and understanding of the water supply, sanitation, and drainage system, electrical supply, communication and security system. The students will be exposed to the principle of the systems followed by the design of the systems in a building or structure.
<b>Transferable Skills</b>	Enhance skills in building services technology
<b>Teaching Methodologies</b>	Lectures, Studio, Tutorial, Workshop
<b>CLO</b>	<p>CLO1 Describe the fundamental principles of building services systems in construction industry.</p> <p>CLO2 Perform basic skills of assembling technology of building services systems in construction industry.</p> <p>CLO3 Report verbally and in writing by interpreting the basic schematic drawing of building services in construction industry.</p>
<b>Pre-Requisite Courses</b>	No course recommendations
<b>Topics</b>	<p><b>1. Water Supply</b></p> <p>1.1) Objectives</p> <p>1.2) Water sources</p> <p>1.3) Process of water supply</p> <p>1.4) Water treatment process, testing and quality control and pollution.</p> <p>1.5) Water reticulation, distribution, legislation and regulation.</p> <p>1.6) Water storage, cold and hot water supply system for low and high rise building and its components.</p> <p><b>2. Sanitation, Drainage and Sewerage System</b></p> <p>2.1) Sanitary appliances, purpose, hygienic requirement, materials, types and sizes, traps.</p> <p>2.2) Above ground – waste water stack system, surface drainage system, provision for access, installation and testing.</p> <p>2.3) Below ground – sub soil drainage and sewerage system.</p> <p>2.4) Treatment and disposal of effluent-foul and surface water, small and large sewage treatment, soak ways and filter beds, public sewers, connection to monsoon drain.</p> <p><b>3. Electrical Supply</b></p> <p>3.1) Principles of Electricity</p> <p>3.2) Public Supply.</p> <p>3.3) Generation and transmission by Tenaga Nasional Berhad: power stations, substations, transformers, overhead and underground cables, etc.</p> <p>3.4) Internal installation.</p> <p>3.5) General principles: cables, fuses, circuit breakers, earthing, MSB, distribution board, lightning protection.</p> <p>3.6) Service intake: domestic, commercial and industrial intake arrangements.</p> <p>3.7) Wiring systems: small and large installations.</p> <p>3.8) Distribution circuits: lightning, socket outlets, fixed apparatus, earthing, etc.</p> <p>3.9) Power ratings.</p> <p>3.10) Emergency Supplies.</p> <p>3.11) Temporary Site Supplies.</p> <p>3.12) Sources, voltage and wiring.</p> <p>3.13) Electrical supply application procedure.</p> <p>3.14) Electricity Act 1949</p>

#### **4. Communication System**

4.1) Telephone System.

4.2) Public supply: branch exchanges, cabinets, distribution points, manholes, etc.

4.3) Internal installation: apparatus rooms, main (subscriber) distribution frame (SDF) room, internal distribution frame (IDF) room, PABX room, and battery room. Switch room: SDF, PABX.

4.4) Cable riser and ducting systems.

4.5) Related by-laws and Telekom Malaysia Berhad's requirements.

4.6) Miscellaneous Systems.

Assessment Breakdown		%	
Continuous Assessment		100.00%	

  

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Lab Exercise	Direct Observation	20%	CLO2
	Presentation	Oral Presentation on Studio Report	20%	CLO3
	Test	Written	30%	CLO1
	Written Report	Lab Report	10%	CLO2
	Written Report	Studio Report	20%	CLO3

  

Reading List	Reference Book Resources
	<ul style="list-style-type: none"> <li>• Stephens, A., &amp; Fuller, M. 2009, <i>Sewage Treatment: Uses, Processes and Impact</i>, Nova Science Pub Inc.</li> <li>• Chadderton, D. V., 2007, <i>Building Services Engineering</i>, 5rd Ed., E.F. Spon London</li> <li>• Walter, T., G., Allison G., K., Benjamin, S., &amp; John, S., R. 2010, <i>Mechanical &amp; Electrical Equipment for Building</i>, 11th Ed., John Wiley New York, USA</li> <li>• Fred, H., &amp; Roger, R. 2009, <i>Building Services Handbook</i>, 5th Ed., Butterworth-Heinemann London, England</li> <li>• Lee, S., &amp; Joyce, M., A. 2007, <i>Plumbing Technology: Design and Installation</i>, 4rd Ed., Delmar/Thomson Learning Victoha, USA</li> </ul>
Article/Paper List	This Course does not have any article/paper resources
Other References	This Course does not have any other resources