



UNIVERSITI TEKNOLOGI MARA

BCM503: BUILDING SERVICES ENGINEERING I

| | |
|--|---|
| Course Name (English) | BUILDING SERVICES ENGINEERING I APPROVED |
| Course Code | BCM503 |
| MQF Credit | 3 |
| Course Description | To create an understanding of the design and installation of the services commonly provided in habitable buildings. The learning process includes a study of the specific characteristics of each type of services, the safety requirements for both installation and operation, the relationship between services systems with building internal components. |
| Transferable Skills | - M&E drawing interpretation skill - Piping/services installation skill - Information management skill - Teamwork and leadership skill - Presentation skill |
| Teaching Methodologies | Lectures, Case Study, Tutorial, Discussion |
| CLO | CLO1 Apply the theories, principles of installation and operations of basic building services. CLO2 Demonstrate universal good and positive values in determining basic building services CLO3 Explain the provision, installation and operation of basic building services in Malaysian buildings |
| Pre-Requisite Courses | No course recommendations |
| Topics | |
| 1. Water Supply and Distribution System 1.1) Objectives and process of water supply and treatment plant 1.2) Water reticulation, distribution, storage, legislation and regulations 1.3) Interpretation of water supply drawings 1.4) Exercising (storage tank and pipe sizing) of cold water supply | |
| 2. Electrical Supply System 2.1) Principles; Public Supply, generation and transmission 2.2) Installation to buildings: General principles (cables, fuses, earthing etc.), service intake (domestic, commercial, industrial) 2.3) Wiring system: small and large installation 2.4) Temporary site supplies 2.5) Interpretation of M&E drawings | |
| 3. Conveyance System 3.1) Lift/escalator/travelator/others mechanical handling types: operation & control systems 3.2) Planning and design systems 3.3) Builders work involves 3.4) Safety measures and fire precautions | |
| 4. Solid waste management 4.1) Methods of collection, disposal and storage (landfill, recycling, incinerator, composting etc.) 4.2) Sanitary landfill: design, technical, methods and operation of landfill 4.3) Related Local Authorities' Rules and Regulations | |
| 5. Sanitary and Sewerage System 5.1) Sanitary appliances; types and purposes 5.2) Above and below ground systems; installation and testing 5.3) Disposal and treatments, discharge system 5.4) Sewerage design and pipe sizing | |

6. Fire safety Technology

- 6.1) Theory and science of fire
- 6.2) Active and passive systems; application to building
- 6.3) Design Consideration (active fire protection system, extinguishers etc.)
- 6.4) Smoke control and pressurization system
- 6.5) Storage and disposal of hazardous materials

| Assessment Breakdown | % |
|-----------------------|--------|
| Continuous Assessment | 40.00% |
| Final Assessment | 60.00% |

| Details of Continuous Assessment | Assessment Type | Assessment Description | % of Total Mark | CLO |
|----------------------------------|-----------------|---|-----------------|------|
| | Case Study | Students are required to conduct a case study. Assessment will be made on student ability in analysing and identifying problems | 30% | CLO3 |
| | Discussion | Assessment will be made throughout the semester. Assessment on students attendance, moral, appearance and attitudes in the class. | 5% | CLO2 |
| | Test | n/a | 5% | CLO1 |

| | | |
|--------------------|---|---|
| Reading List | Recommended Text | <ul style="list-style-type: none"> • Fred Hall, Roger Greeno 2007, <i>Building Services Handbook</i>, 4th Edition Ed., Butterworth-Heinemann Amsterdam • David V Chadderton 2007, <i>Building Services Engineering</i>, 5th Edition Ed., Taylor & Francis London • Roger Greeno 2000, <i>Building Services, Technology and Design</i>, Pearson Education Limited England |
| Article/Paper List | This Course does not have any article/paper resources | |
| Other References | This Course does not have any other resources | |