# Scheme of Work

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| Course: | Pearson BTEC Level 4 Higher Nationals in Construction and the Built Environment | Unit/module : | 2/Construction Technology | Year: | 2023-2024 |
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| Tutor: | Adewale Abimbola | Time: | 29 Weeks, 1.45 hours per week | | |

| Sessions | Learning Outcomes (s) | Session Activities |
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| 1 | N/A | Induction |
| 2 | LO1 | **Topics: Unit introduction and types of structures in the built environment.**<br>Presentation and discussion of the unit brief, Pearson-set theme, unit learning outcomes, and assessment criteria.<br>Presentation on the types of structures in the built environment.<br>**Sample activities:**<br>Students to describe the differences between residential, commercial, industrial buildings and infrastructure projects. |
| 3 | LO1 | **Topic:** Construction structures.<br>Presentation on construction structures.<br>**Sample activities:**<br>Students will identify and list the elements of a building which are load- and non-loadbearing and identify the types of loads to which they are exposed.<br>Students to calculate thermal expansion in structures. |
| 4 | LO1 | **Topic:** Modern Methods of Construction (MMC) and sustainability.<br>Presentation on MMC and sustainability.<br>**Sample activities:**<br>Students will discuss the ways in which sustainability can be promoted in construction projects.<br>Students will research one building material in terms of scarcity and renewability and propose alternatives to overcome this problem. |
| 5 | LO1 | **Topic:** Construction materials and properties.<br>Presentation on construction materials and properties.<br>**Sample activities:**<br>Students will list and describe materials used in construction which promote buildability including standardisation and off-site construction. |
| 6 | LO1 | **Topic:** Construction Environment.<br>Presentation on construction environment.<br>**Sample activities:**<br>Students will describe the characteristics of materials and appraise them for durability, thermal expansion, resistance to heat loss and thermal transmission, and weather and moisture resistance. |
| 7 | LO1 | **Topic:** Health and safety, and professional bodies.<br>Presentations on health and safety and professional bodies.<br>**Sample activities:** |

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| | | Students will analyse the way that construction projects address risk and health and safety.<br>Students will discuss the legal requirements in the construction process. |
| 8 | LO1 | **Topic:** Construction information and professional bodies.<br>Presentation on construction information.<br>**Sample activities:**<br>Students will compare the construction terminology used in different types of construction project; BIM and MMC, standardisation and dimensional coordination. |
| 9 | LO1 | **LO1 Revision** |
| 10 | LO2 | **Topic:** Pre-design studies<br>Presentation on pre-design studies.<br>**Sample activities:**<br>Students will describe the pre-design studies carried out and types of information collected for a given construction site. |
| 11 | LO2 | **Topic:** Types of substructure; functional characteristics & substructure design considerations<br>Presentations on the types of substructure, and functional characteristics & substructure design considerations.<br>**Sample activities:**<br>Students will explain the functional characteristics and design criteria for primary and secondary elements of a building substructure.<br>Students will analyse how site conditions impact on the design of foundations. |
| 12 | LO2 | **Topic:** Superstructure elements; Functional characteristics & superstructure design considerations<br>Presentations on superstructure elements, and functional characteristics & superstructure design considerations.<br>**Sample activities:**<br>Students will explain the functional characteristics and design criteria for primary and secondary elements of a building superstructure. |
| 13 | LO2 | **Topic:** substructure design.<br>Presentation on substructure design.<br>**Sample activities:**<br>Students will describe the construction process of different shallow and foundations.<br>Students will appraise shallow and deep foundations against different types of buildings.<br>Students will design a shallow foundation using a tutor-led scenario.<br>Students will design a deep foundation using a tutor-led scenario. |
| 14 | LO1&2 | **Issue Assignment 1**<br>Tutor discuss submission requirements for the assignment.<br>Students are introduced to the assessment process for the assignment, breakdown of the assignment requirement, revisit learning outcomes and criteria. |
| 15-16 | LO1&2 | **Support & Independent study** |

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| | | **Topic: Assignment 1 – Independent study & support sessions**<br>Students, working individually, begin to identify resources required in relation to their proposed project.<br>Students may meet with tutor, individually or in groups, to discuss their projects and receive advice in support of developing final outcomes, report and presentation. |
| 17 | LO1&2 | **Submit Assignment 1**<br>Students, working individually, to complete and submit the assignment.<br>Students may meet with tutor to discuss their projects and receive advice in support of developing final report. |
| 18 | LO3 | **Topics: Contamination management and soil remediation**<br>Presentations on Contamination management and soil remediation.<br>**Sample activities:**<br>Students will explore the contamination management and soil remediation techniques and use illustrations to explain how they are constructed and used.<br>- |
| 19 | LO3 | **Topic: Dewatering and substructure works**<br>Presentations on dewatering techniques and substructure works.<br>**Sample activities:**<br>Students will describe the types of substructure works carried out by civil engineers.<br>**Tutor to complete assignment 1 feedback.** |
| 20 | LO3 | **Topic**: structural framing systems.<br>Presentations on structural framing systems.<br>**Sample activities:**<br>Students will compare different types of structural frame used to carry the primary and secondary elements of the superstructure. |
| 21 | LO3 | **LO3 Revision** |
| 22 | LO4 | Topic: Primary service supply and service distribution.<br>Presentations on Primary service supply and service distribution.<br>**Sample activities:**<br>Students will describe the supply arrangements for primary services.<br>Students will explain the distribution arrangements for primary services. |
| 23 | LO4 | **Topic:** Services accommodation.<br>Presentation on services accommodation.<br>**Sample activities:**<br>Students will Demonstrate the elements of the superstructure used to facilitate the primary services<br>Students will analyse the ways in which the distribution of the primary services impact on the overall design of the building. |
| 24 | LO3&4 | **Issue Assignment 2**<br>Tutor discuss submission requirements for the assignment.<br>Students are introduced to the assessment process for the assignment, breakdown of the assignment requirement, revisit learning outcomes and criteria. |

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| 25-26 | LO3&4 | **Support & Independent study**<br>**Topic: Assignment 2 – Independent study & support sessions**<br>Students, working individually, begin to identify resources required in relation to their proposed project.<br>Students may meet with tutor, individually or in groups, to discuss their projects and receive advice in support of developing final outcomes, report and presentation. |
| 27 | LO3&4 | **Submit Assignment 2**<br>Students, working individually, to complete and submit the assignment.<br>Students may meet with tutor to discuss their projects and receive advice in support of developing final report. |
| 28 | N/A | **Tutor to begin to provide assignment 2 feedback.** |
| 29 | N/A | - **END OF UNIT** |