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**Department of Geomatics**

**College of Engineering**

**Salahaddin University – Hawler**

**Subject: Elective subjects (Building materials and Building Construction)**

**Course Book –Year 4**

**Lecturer's name: Dr.Kamaran Kakel Gardy**

**Academic Year: 2019 -2020**

**Course Book**

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| **1. Course name** | **Building materials and Building Construction**  |
| **2. Lecturer in charge** | **Dr.Kamaran Kakel Gardy** |
| **3. Department/ College** |  |
| **4. Contact** | **e-mail** kamaran.hamad@su.edu.krd**Tel:** |
| **5. Time ( hr. / week )** | **two** |
| **6. Office hours** | **four** |
| **7. Course overview:** The construction materials industry consists of a wide range of companies involved in the mining, quarrying, and processing of raw materials used for both heavy and building construction. Materials such as cement, sand and gravel, clay, concrete, and marble are used in this industry. The purchase price of materials can also be one of the main determinants in deciding what material to use in construction projects. Apart from economic costs, costs derived from pollution and energy, as well as social aspects must be considered in choosing building materials. |
| **8. Course Objective:** To familiars, the students about the characteristic of construction materials and methods that can be used in civil engineering fields, also to develop the skills for identification of suitable construction materials and methods for projects  |
| **9. Student's Obligation*** Regular attendance is required according to the university rules.
* The use of mobile phone during the class is prohibited.
* Only the students who are officially enrolled can attend the class, guests and children are not admitted.
* Daily participation and conducting assignments are required.
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| **10. Forms of Teaching** Usually, a whiteboard and data show will be used for explaining the lectures. The lectures include details and explanations of theories, equations, and methods of solution for deferent types of problems. Also, the lectures include several examples of solved problems for each subject. In classroom and during the presentation there will be focus on sharing the students in the course of explanation by raising a direct question to single student or a group of students.  |
| **11. Assessment Scheme** The first periodical examination carried out at the end of January, the second periodical examination carried out in April, and the final examination-first trial carried out at the beginning of July, while the second trial carried out in September. The students are required to exercise the classroom activities, quizzes at the end each subject, and HomeWorks. The distribution of marks will be as follows: **Marks per Term:**  First periodic Exam 15%  Second periodic Exam 15%  Quizzes& Classroom Activities 10%  Final Exam 60% Total of 100%  |
| **12. Course Reading List:** |
| **30 weeks** |
| **1st Week** | 1. **Building Materials (first course) content:**

-Cement |
| **2nd Week** | Types of Cement |
| **3rd Week**  | Testing of cement |
| **4th Week** | Aggregate (Sand, and gravel). |
| **5th Week** | Aggregate (Sand, and gravel). |
| **6th Week** | concrete |
| **7th Week** | Concrete Workability Measurement. |
| **8thWeek** | Concrete Workability Measurement. |
| **9th Week** | Bleeding of concrete |
| **10th Week** | Processes of Manufacture of Concrete. |
| **11th Week** | Processes of Manufacture of Concrete. |
| **12th Week** | Methods of Concrete Mix Design. |
| **13th Week** | Methods of Concrete Mix Design. |
| **14th, 15th, 16th, 17th, 18th, 19th, 20th, 21st, 22nd, .. 30th weeks** | **Weeks 13,14:** Part II: Building Construction, Introduction. Building stone, tests for stones**Weeks,15,16:** Building Units.**Week 17:** Types of brick walls..**Week 17,18,19:** Concrete Bricks and Blocks**Week 20:** Thermostone.**Week 21:** Foundation**Week22,23:** Types of foundation**Week24,25,26:** Excavation and dewatering **Weeks 27,28,29,30:** Quantity estimations. |
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