

## Course Description Form

|                                                                             |              |                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                     |                                               |                                                                                                             |
|-----------------------------------------------------------------------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| <b>1. Course Name:</b>                                                      |              |                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                     |                                               |                                                                                                             |
| Concrete technology                                                         |              |                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                     |                                               |                                                                                                             |
| <b>2. Course Code:</b>                                                      |              |                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                     |                                               |                                                                                                             |
| CIV034                                                                      |              |                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                     |                                               |                                                                                                             |
| <b>3. Semester / Year:</b>                                                  |              |                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                     |                                               |                                                                                                             |
| FIRST 2025=2026                                                             |              |                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                     |                                               |                                                                                                             |
| <b>4. Description Preparation Date:</b>                                     |              |                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                     |                                               |                                                                                                             |
| 2025/09/20                                                                  |              |                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                     |                                               |                                                                                                             |
| <b>5. Available Attendance Forms:</b>                                       |              |                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                     |                                               |                                                                                                             |
| Lectures are in person at the university only                               |              |                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                     |                                               |                                                                                                             |
| <b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>          |              |                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                     |                                               |                                                                                                             |
| Number of Credit Hours (Total) 4 / Number of Units (Total) 3                |              |                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                     |                                               |                                                                                                             |
| <b>7. Course administrator's name (mention all, if more than one name)</b>  |              |                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                     |                                               |                                                                                                             |
| Name: اسراء حسن السعيدى                                                     |              |                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                     |                                               |                                                                                                             |
| Email: <a href="mailto:israa.nayel@uowa.edu.iq">israa.nayel@uowa.edu.iq</a> |              |                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                     |                                               |                                                                                                             |
| <b>8. Course Objectives</b>                                                 |              |                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                     |                                               |                                                                                                             |
| <b>Course Objectives</b>                                                    |              | <ul style="list-style-type: none"> <li>Introducing students to the basic materials for making concrete.</li> <li>Introducing students to the mechanism of conducting tests for materials used in the manufacture of concrete.</li> <li>Introducing students to concrete mix design methods.</li> <li>Introducing students to methods for examining freshly mixed concrete and hardened concrete.</li> </ul> |                                                                                                                                                                                                                                     |                                               |                                                                                                             |
| <b>9. Teaching and Learning Strategies</b>                                  |              |                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                     |                                               |                                                                                                             |
| <b>Strategy</b>                                                             |              | Education is by giving lectures, including scientific discussions as an essential part of the lecture, and then giving sufficient time to the students to study, after which the scheduled tests and examinations are conducted.                                                                                                                                                                            |                                                                                                                                                                                                                                     |                                               |                                                                                                             |
| <b>10. Course Structure</b>                                                 |              |                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                     |                                               |                                                                                                             |
| <b>Week</b>                                                                 | <b>Hours</b> | <b>Required Learning Outcomes</b>                                                                                                                                                                                                                                                                                                                                                                           | <b>Unit or subject name</b>                                                                                                                                                                                                         | <b>Learning method</b>                        | <b>Evaluation method</b>                                                                                    |
| 15                                                                          | 4            | At the end of the course, the learner will be able to do the following:<br>1. A historical overview of cement materials.<br>2. Raw materials used in the cement industry and                                                                                                                                                                                                                                | <ul style="list-style-type: none"> <li>Fresh concrete and its properties</li> <li>Workability of concrete and factors affecting it</li> <li>Segregation, Bleeding</li> <li>Concrete batching, Stationary and ready mixed</li> </ul> | Lectures are in person at the university only | (1st exam, 2nd exam, 3rd exam = 25), (Quizzes, Homework = 5%), (Lab reports = 10%), (Activities (Seminar) = |

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|  |  | cement manufacturing methods.<br>3. Chemical reactions during cement manufacturing as well as hydration reactions.<br>4. Raw materials for concrete.<br>5. Types of cement and aggregates, methods and laboratory tests.<br>6. Calculations of mixing ratios for concrete and their uses. | concrete, Placing and compaction of fresh concrete, Vibration and vibrator types<br>• Curing of concrete, Benefits of curing, methods of curing<br>• Hot weather concreting, Precautions to reduce the problems due to hot weather<br>• Hardened concrete, concrete strength, types of concrete strength<br>• Factors affecting the strength, the factors affecting the results of the strength tests<br>• Design of concrete mixes, the American method<br>• Design of concrete mixes, the American method (Examples)<br>• Design of concrete mixes, the BS method<br>• Design of concrete mixes, the BS method (Examples)<br>• Modulus of elasticity, Types of modulus of elasticity<br>• Shrinkage, Types of shrinkage, Creep |  | 5%), (Final exam = 50%) |
|  |  |                                                                                                                                                                                                                                                                                           | Concrete admixture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                         |

## 11. Course Evaluation

(1st exam, 2nd exam, 3th exam = 25), (Quizzes, Homework = 5%), (Lab reports = 10%), (Activities (Seminar) = 5%), (Final exam = 50%)

## 12. Learning and Teaching Resources

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| Required textbooks (curricular books, if any)                      | NEVILLE, A. M. 2005 "PROPERTIES OF CONCRETE (5TH EDITION)"                                               |
| Main references (sources)                                          | NEVILLE, A. M. 2005 "PROPERTIES OF CONCRETE (5TH EDITION)"                                               |
| Recommended books and references (scientific journals, reports...) | Mehta, P. K. & Monteiro, P. J. M. 2006. Concrete: Microstructure, properties and materials, McGraw-Hill. |
| Electronic References, Websites                                    | American Concrete Institute (ACI)                                                                        |

  
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