

# Scheme of Studies Bachelor in Civil Engineering (Specialization in Construction) - (Applicable from Batch 2025 onwards)

| FIRSTYEAR  |   |            |    |    |                                      |   |            |     |     |  |  |  |
|--|---|------------|----|----|--------------------------------------|---|------------|-----|-----|--|--|--|
| Fall Semester  |   |            |    |    | Spring Semester                      |   |            |     |     |  |  |  |
| Course Code  | Course Title  | Credit Hrs |    |    | Course Code                          | Course Title  | Credit Hrs |     |     |  |  |  |
|  |   | Th         | Pr | T  |                                      |   | Th         | Pr  | T   |  |  |  |
| PH-129   | Applied Physics   | 3          | 0  | 3  | MT-221                               | Linear Algebra & Ordinary Differential Equations            | 3          | 0   | 3   |  |  |  |
| ES-105/<br>ES-127  | Pakistan Studies / Pakistan Studies<br>(For Foreigners)           | 2          | 0  | 2  | EA-104                               | Functional English  | 3          | 0   | 3   |  |  |  |
| MT-116   | Calculus & Analytical Geometry                                    | 3          | 0  | 3  | ES-108                               | Ideology and Constitution of Pakistan                       | 2          | 0   | 2   |  |  |  |
| ES-206/<br>ES 209  | Islamic Studies / Ethical Behaviour<br>(For Non-Muslims students) | 2          | 0  | 2  | CF-101                               | IT Fundamentals and Applications                            | 2          | 1   | 3   |  |  |  |
| CE-112   | Engineering Drawing-I   | 1          | 2  | 3  | CE-114                               | Engineering Surveying-I                                     | 2          | 1   | 3   |  |  |  |
| CE-113   | Engineering Mechanics   | 3          | 1  | 4  | CE-115                               | Engineering Materials                                       | 2          | 1   | 3   |  |  |  |
| CY-100   | Essentials of Chemistry<br>(For computer science students)        | NC         | -  | NC | -                                    | -   | -          | -   | -   |  |  |  |
| Specialization   |   | 14         | 3  | 17 | Specialization                       |   | 14         | 3   | 17  |  |  |  |
| SECOND YEAR  |   |            |    |    |                                      |   |            |     |     |  |  |  |
| Fall Semester  |   |            |    |    | Spring Semester                      |   |            |     |     |  |  |  |
| Course Code  | Course Title  | Credit Hrs |    |    | Course Code                          | Course Title  | Credit Hrs |     |     |  |  |  |
|  |   | Th         | Pr | T  |                                      |   | Th         | Pr  | T   |  |  |  |
| CE-224   | Engineering Surveying-II  | 3          | 1  | 4  | CE-228                               | Engineering Drawing-II                                      | 1          | 2   | 3   |  |  |  |
| CE-225   | Mechanics of Solids-I   | 3          | 1  | 4  | CE-229                               | Structural Analysis-I                                       | 3          | 0   | 3   |  |  |  |
| CE-226   | Geology for Engineers   | 2          | 0  | 2  | CE-230                               | Fluid Mechanics-I   | 3          | 1   | 4   |  |  |  |
| CE-110   | Chemistry for Civil Engineers                                     | 1          | 1  | 2  | MT-331                               | Probability & Statistics                                    | 3          | 0   | 3   |  |  |  |
| EA-218   | Business Communication  | 2          | 1  | 3  | CN-224                               | Fundamentals of Applied Economics for Engineers             | 2          | 0   | 2   |  |  |  |
| AR-259   | Architecture and Town Planning                                    | 2          | 0  | 2  | CF-201                               | Civics and Community Engagement                             | 2          | 0   | 2   |  |  |  |
| -  | -   | -          | -  | -  | CF-200                               | Community Service   | NC         | -   | NC  |  |  |  |
| Specialization   |   | 13         | 4  | 17 | Specialization                       |   | 14         | 3   | 17  |  |  |  |
| THIRD YEAR   |   |            |    |    |                                      |   |            |     |     |  |  |  |
| Fall Semester  |   |            |    |    | Spring Semester                      |   |            |     |     |  |  |  |
| Course Code  | Course Title  | Credit Hrs |    |    | Course Code                          | Course Title  | Credit Hrs |     |     |  |  |  |
|  |   | Th         | Pr | T  |                                      |   | Th         | Pr  | T   |  |  |  |
| CE-324   | Reinforced Concrete Design-I                                      | 3          | 0  | 3  | CE-331                               | Quantity & Cost Estimation                                  | 3          | 0   | 3   |  |  |  |
| CE-341   | Transportation Engineering-I                                      | 2          | 1  | 3  | CE-327                               | Soil Mechanics-I  | 3          | 1   | 4   |  |  |  |
| CN-338   | Construction Engineering  | 2          | 0  | 2  | CN-334                               | Construction Jobsite Engineering & Management               | 2          | 0   | 2   |  |  |  |
| CN-323   | Construction Contracts  | 3          | 0  | 3  | CN-333                               | Construction Economic Analysis                              | 2          | 0   | 2   |  |  |  |
| CN-336   | Accounting and Financial Management                               | 3          | 0  | 3  | CE-330                               | Essentials in Construction Project Management               | 3          | 0   | 3   |  |  |  |
| CT-391   | Introduction to AI and Data Science                               | 3          | 0  | 3  | CE-328                               | Introduction to Entrepreneurship and Opportunity Assessment | 2          | 0   | 2   |  |  |  |
| -  | -   | -          | -  | -  | EA/ES-###                            | Foreign Language-I  | NC         | -   | NC  |  |  |  |
| Specialization   |   | 16         | 1  | 17 | Specialization                       |   | 15         | 1   | 16  |  |  |  |
| FINAL YEAR   |   |            |    |    |                                      |   |            |     |     |  |  |  |
| Fall Semester  |   |            |    |    | Spring Semester                      |   |            |     |     |  |  |  |
| Course Code  | Course Title  | Credit Hrs |    |    | Course Code                          | Course Title  | Credit Hrs |     |     |  |  |  |
|  |   | Th         | Pr | T  |                                      |   | Th         | Pr  | T   |  |  |  |
| CN-428   | Sustainable Construction  | 3          | 0  | 3  | CN-440                               | Quality and Safety Aspects in Construction Engineering      | 2          | 0   | 2   |  |  |  |
| CE-454   | Hydraulic and Water Resources Engineering-I                       | 3          | 1  | 4  | CN-429                               | Building Information Modelling                              | 1          | 2   | 3   |  |  |  |
| CN-437   | Legal and Regulatory Environment in the Construction Industry     | 2          | 0  | 2  | CE/CN-###                            | Civil Engineering Elective                                  | 2/1        | 0/1 | 2   |  |  |  |
| EN-406   | Environmental Engineering   | 3          | 1  | 4  | CN-434                               | Temporary Structures in Construction                        | 3          | 0   | 3   |  |  |  |
| CE-409   | Civil Engineering Design Project - I                              | 0          | 3  | 3  | CF-401                               | Professional Ethics   | 2          | 0   | 2   |  |  |  |
| CN- 438  | Systems in Building Construction                                  | 2          | 0  | 2  | CN-439                               | Heavy Construction Equipment and Operations                 | 2          | 0   | 2   |  |  |  |
| ES/EA-###  | Foreign Language-II   | NC         | -  | NC | CE-409                               | Civil Engineering Design Project - II                       | 0          | 3   | 3   |  |  |  |
| Specialization   |   | 13         | 5  | 18 | Specialization                       |   | 12         | 5   | 17  |  |  |  |
|  |   |            |    |    |                                      |   |            |     |     |  |  |  |
| Total Credit Hours (Fall Semester)                             |   | 55         | 15 | 70 | Total Credit Hours (Spring Semester) |   | 55         | 11  | 66  |  |  |  |
| Total BE - Civil (Specialization in Construction) Credit Hours |   |            |    |    |                                      |   | 111        | 25  | 136 |  |  |  |

Number of contact hours:

The contact hours for the study of courses are as follows:

1 credit hour of theory class = 1 contact hour

1 credit hour of lab/design class / practical = 3 contact hours

| Civil Engineering Electives |  | Th | Pr | T |
|-----------------------------|--|----|----|---|
| CE-442                      | Applied Hydraulics                           | 2  | 0  | 2 |
| CE-443                      | Structural Design & Drawing                  | 2  | 0  | 2 |
| CE-444                      | Masonry Structures                           | 2  | 0  | 2 |
| CE-446                      | Geosynthetics and Their Applications         | 2  | 0  | 2 |
| CE-447                      | Geoinformatics Applications                  | 1  | 1  | 2 |
| CE-448                      | Coastal and Harbour Engineering              | 2  | 0  | 2 |
| CE-449                      | Hydraulics and Water Resource Engineering-II | 2  | 0  | 2 |
| CN-441                      | Environmental Issues in Construction         | 2  | 0  | 2 |
| CN-442                      | Disaster and Reconstruction Management       | 2  | 0  | 2 |
| MG-228                      | Sociology and Development                    | 2  | 0  | 2 |

| Foreign Language - I |                     |    |
|----------------------|---------------------|----|
| EA-220               | Chinese Language-I  | NC |
| ES-222               | Arabic Language-I   | NC |
| EA-224               | German Language-I   | NC |
| EA-226               | French Language-I   | NC |
| EA-231               | Turkish Language-I  | NC |
| EA-233               | Japanese Language-I | NC |
| EA-235               | Russian Language-I  | NC |

| Foreign Language - II |                      |    |
|-----------------------|----------------------|----|
| EA-221                | Chinese Language-II  | NC |
| ES-223                | Arabic Language-II   | NC |
| EA-225                | German Language-II   | NC |
| EA-227                | French Language-II   | NC |
| EA-232                | Turkish Language-II  | NC |
| EA-234                | Japanese Language-II | NC |
| EA-236                | Russian Language-II  | NC |