

# Walchand College of Engineering

(Government Aided Autonomous Institute)

Vishrambag, Sangli. 416 415



Credit System for  
T.Y. B.Tech. (Civil Engineering)

Sem-V and VI

AY 2023-24



# Walchand College of Engineering

(Government Aided Autonomous Institute)

## Credit System for T.Y. B.Tech. (Civil Engineering) Sem-V AY 2023-24

| Sr.No.                         | Category | Course Code | Course Name                                   | L  | T | P | I | Hrs | Cr | MSE/LA1 | ISE/LA2 | ESE | Ext |
|--------------------------------|----------|-------------|---|----|---|---|---|-----|----|---------|---------|-----|-----|
| Professional Core (Theory)     |          |             |   |    |   |   |   |     |    |         |         |     |     |
| 01                             | PC       | 6CV301      | Water Supply and Treatment Technology         | 3  | 0 | 0 | 0 | 3   | 3  | 30      | 20      | 50  |     |
| 02                             | PC       | 6CV302      | Soil Mechanics                                | 3  | 0 | 0 | 0 | 3   | 3  | 30      | 20      | 50  |     |
| 03                             | PC       | 6CV303      | Transportation Engineering                    | 3  | 0 | 0 | 0 | 3   | 3  | 30      | 20      | 50  |     |
| 04                             | PC       | 6CV304      | Design of Steel Structures                    | 3  | 0 | 0 | 0 | 3   | 3  | 30      | 20      | 50  |     |
| Professional Core (Lab)        |          |             |   |    |   |   |   |     |    |         |         |     |     |
| 05                             | PC       | 6CV351      | Water Quality Analysis Lab                    | 0  | 0 | 2 | 0 | 2   | 1  | 30      | 30      | 40  | POE |
| 06                             | PC       | 6CV352      | Soil Mechanics Lab                            | 0  | 0 | 2 | 0 | 2   | 1  | 30      | 30      | 40  | OE  |
| 07                             | PC       | 6CV353      | Highway Materials and Traffic Engineering Lab | 0  | 0 | 2 | 0 | 2   | 1  | 30      | 30      | 40  | OE  |
| 08                             | PC       | 6CV355      | Presentation and Report Writing               | 0  | 0 | 2 | 0 | 2   | 1  | 30      | 30      | 40  |     |
| Professional Elective (Theory) |          |             |   |    |   |   |   |     |    |         |         |     |     |
| 09                             | PE       | Refer List  | Elective-1                                    | 2  | 0 | 0 | 0 | 2   | 2  | 30      | 20      | 50  |     |
| Open Elective                  |          |             |   |    |   |   |   |     |    |         |         |     |     |
| 10                             | OE       | Refer List  | Open Elective-1                               | 3  | 0 | 0 | 0 | 3   | 3  | 30      | 20      | 50  |     |
| Humanities                     |          |             |   |    |   |   |   |     |    |         |         |     |     |
| 11                             | HS       | 6HS301      | Employability Skills 1                        | 0  | 0 | 0 | 2 | 2   | 2  | 30      | 30      | 40  |     |
| 12                             | HS       | Refer List  | Humanities-1                                  | 0  | 0 | 0 | 2 | 2   | 2  | 30      | 30      | 40  |     |
| Total                          |          |             |   | 17 | 0 | 8 | 4 | 29  | 25 |         |         |     |     |

### Notes:

For Theory courses: There shall be MSE, ISE and ESE. The ESE is a separate head of passing.

For Lab courses: There shall be continuous assessment (LA1, LA2, ESE). The ESE is a separate head of passing. The POE/OE indicates external component for ESE.

For further details, refer to Academic and Examination rules and regulations.



Dr. A. K. Mali  
Department Academic Coordinator



Dr. G. R. Munavalli  
Head, Department of Civil Engineering



Dr. Mrs. S. P. Sonavane  
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**Elective Course List for T.Y. B.Tech. (Civil Engineering) Sem-V AY 2023-24**

| Sr. No.    | Track                      | Course Code | Course Name                             |
|------------|----------------------------|-------------|---|
| Elective-1 |                            |             |   |
| 01         | Transportation Engineering | 6CV311      | Remote Sensing and GIS                  |
| 02         | Environmental Engineering  | 6CV312      | Plastic and Electronic Waste Management |
| 03         | Environmental Engineering  | 6CV313      | Air and Noise Pollution Control         |
| 04         | Infrastructure Engineering | 6CV314      | River Engineering                       |
| 05         | Infrastructure Engineering | 6CV315      | Advanced Surveying                      |
| 06         | Structural Engineering     | 6CV316      | Structural Mechanics                    |
| 07         | Structural Engineering     | 6CV317      | Advanced Concrete Technology            |
| 08         | Infrastructure Engineering | 6CV318      | Airport Engineering                     |

| Sr.No.          | Offering Dept.           | Course Code | Course Name                          |
|-----------------|--------------------------|-------------|--------------------------------------|
| Open Elective-1 |                          |             |                                      |
| 01              | Civil Engg.*             | 6OE301      | Building Planning and Construction   |
| 02              | Civil Engg.*             | 6OE302      | Disaster Management                  |
| 03              | Applied Mechanics Dept * | 6OE315      | Theory of structures                 |
| 04              | Mechanical Engg.         | 6OE329      | Non-Conventional Machining Processes |
| 05              | Electrical Engg.         | 6OE343      | Electrical Machine Technology        |
| 06              | Electronics Engg.        | 6OE357      | Introduction to Electronic Systems   |
| 07              | Electronics Engg.        | 6OE358      | Signals and Systems                  |
| 08              | CSE Engg.                | 6OE371      | Data Science                         |
| 09              | IT Engg.                 | 6OE385      | Cloud Computing System               |
| 10              | IT Engg.                 | 6OE386      | Joy of Python Programming            |
| 11              | IT Engg.                 | 6OE387      | Data Science for Engineers           |

| Sr.No.       | Course Code | Course Name                      |
|--------------|-------------|----------------------------------|
| Humanities-1 |             |                                  |
| 01           | 6HS303      | German Language                  |
| 02           | 6HS304      | French Language                  |
| 03           | 6HS305      | Japanese Language                |
| 04           | 6HS306      | Introduction to Entrepreneurship |

\* Open Elective-1 offered by Civil Dept. is allowed for students of all other departments (Except Civil Dept.)

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| Sr.No.                         | Category | Course Code | Course Name   | L  | T | P | I | Hrs | Cr | MSE/LA1 | ISE/LA2 | ESE | Ext |
|--------------------------------|----------|-------------|---|----|---|---|---|-----|----|---------|---------|-----|-----|
| Professional Core (Theory)     |          |             |   |    |   |   |   |     |    |         |         |     |     |
| 01                             | PC       | 6CV321      | Waste Management and Pollution Control                  | 3  | 0 | 0 | 0 | 3   | 3  | 30      | 20      | 50  |     |
| 02                             | PC       | 6CV322      | Quantity Survey and Valuation                           | 3  | 0 | 0 | 0 | 3   | 3  | 30      | 20      | 50  |     |
| 03                             | PC       | 6CV323      | Foundation Engineering                                  | 3  | 0 | 0 | 0 | 3   | 3  | 30      | 20      | 50  |     |
| 04                             | pc       | 6CV324      | Design of Reinforced Concrete Structures                | 3  | 0 | 0 | 0 | 3   | 3  | 30      | 20      | 50  |     |
| Professional Core (Lab)        |          |             |   |    |   |   |   |     |    |         |         |     |     |
| 05                             | PC       | 6CV371      | Sewerage and Sewage Treatment Lab                       | 0  | 0 | 2 | 0 | 2   | 1  | 30      | 30      | 40  | OE  |
| 06                             | PC       | 6CV341      | Mini-Project 2: Estimating and Costing                  | 0  | 0 | 2 | 0 | 2   | 1  | 30      | 30      | 40  | OE  |
| 07                             | PC       | 6CV342      | Mini-Project 3: Design and Drawings of Steel Structures | 0  | 0 | 2 | 0 | 2   | 1  | 30      | 30      | 40  | OE  |
| Professional Elective (Theory) |          |             |   |    |   |   |   |     |    |         |         |     |     |
| 09                             | PE       | Refer List  | Elective-2  | 2  | 0 | 0 | 0 | 2   | 2  | 30      | 20      | 50  |     |
| Professional Elective (Lab)    |          |             |   |    |   |   |   |     |    |         |         |     |     |
| 09                             | PE       | Refer List  | Elective Lab 1  | 0  | 0 | 2 | 0 | 2   | 1  | 30      | 30      | 40  |     |
| Open Elective                  |          |             |   |    |   |   |   |     |    |         |         |     |     |
| 10                             | OE       | Refer List  | Open Elective-2   | 3  | 0 | 0 | 0 | 3   | 3  | 30      | 20      | 50  |     |
| Humanities                     |          |             |   |    |   |   |   |     |    |         |         |     |     |
| 11                             | HS       | 6CV377      | Humanities-2- Project Management                        | 0  | 0 | 0 | 2 | 2   | 2  | 30      | 30      | 40  |     |
| 11                             | HS       | 6HS302      | Integrated/ Employability Skills-2                      | 0  | 0 | 0 | 2 | 2   | 2  |         |         |     |     |
|                                |          |             | Total   | 17 | 0 | 8 | 4 | 29  | 25 |         |         |     |     |

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| Sr.No.                         | Track                                      | Course Code | Course Name                                 |
|--------------------------------|--|-------------|---|
| <b>Professional Elective-2</b> |  |             |   |
| 01                             | Environmental Engineering                  | 6CV331      | Industrial and Biomedical Waste Management  |
| 02                             | Environmental Engineering                  | 6CV332      | Advances in urban water distribution system |
| 03                             | Hydraulics and Water Resources Engineering | 6CV333      | Watershed Management                        |
| 04                             | Infrastructure Engineering                 | 6CV334      | Town and Country Planning                   |
| 05                             | Infrastructure Engineering                 | 6CV335      | Design of Masonry Structures                |
| 06                             | Structural Engineering                     | 6CV336      | Advanced Structural Analysis                |
| 07                             | Transportation Engineering                 | 6CV337      | Bridge Engineering                          |
| <b>Elective Lab 1</b>          |  |             |   |
| 01                             | Structural Engineering                     | 6CV372      | Advanced Concrete Technology Lab            |
| 02                             | Environmental Engineering                  | 6CV373      | Municipal Solid Waste Management Lab        |
| 03                             | Infrastructure Engineering                 | 6CV374      | Design of Hydraulic Structure Lab           |
| 04                             | Infrastructure Engineering                 | 6CV375      | Advanced Surveying Lab                      |
| 05                             | Infrastructure Engineering                 | 6CV376      | Foundation Engineering Lab                  |
| 06                             | Structural Engineering                     | 6CV378      | Concrete Technology Lab <sup>##</sup>       |

| Sr.No.                 | Offering Dept.           | Course Code | Course Name   |
|------------------------|--------------------------|-------------|---|
| <b>Open Elective-2</b> |                          |             |   |
| 01                     | Civil Engg.*             | 6OE308      | Ecology   |
| 02                     | Civil Engg.*             | 6OE309      | Solid Waste Management                              |
| 03                     | Applied Mechanics Dept * | 6OE322      | Maintenance and Rehabilitation of Structures        |
| 04                     | Mechanical Engg.         | 6OE336      | Basics of Automobile Engineering                    |
| 05                     | Electrical Engg.         | 6OE350      | Industrial Automation                               |
| 06                     | Electronics Engg.        | 6OE364      | Cyber Physical Systems                              |
| 07                     | Electronics Engg.        | 6OE365      | Biomedical Engineering                              |
| 08                     | CSE                      | 6OE378      | Soft Computing                                      |
| 09                     | IT                       | 6OE392      | Web Development and Applications                    |
| 10                     | IT                       | 6OE393      | Fundamentals of Machine Learning                    |
| 11                     | IT                       | 6OE394      | Remote Sensing and Geographical Information Systems |

\* Open Elective-2 offered by Civil Dept. is allowed for students of all other departments (Except Civil Dept.)

## - for this 2023-24 batch only



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