



**ANDHI SCHOOL OF ENGINEERING**  
BHABANDHA, BERHAMPUR

BRANCH:- CIVIL ENGINEERING

SEMESTER:- 4th

SUBJECT:- Th2. HYDRAULICS & IRRIGATION ENGINEERING

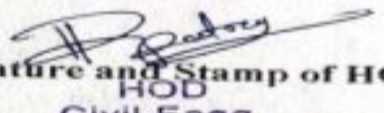
Name of the Faculty - ER. SRIDHAR SAHU & ER. MAMINI GOUDA

|  |              | TOPICS TO BE TAKEN |   |                               | ACTUALLY TOPIC TAKEN |   |  |         |
|--|--------------|--------------------|---|-------------------------------|----------------------|---|--|---------|
| Sl. No                                     | Topic/Module | No. of period      | Details of the topics   | Date                          | Topic No.            | Topic Name  | Date   | Remarks |
| <b>PART: A (HYDRAULICS &amp; MACHINES)</b> |              |                    |   |                               |                      |   |  |         |
| 1  | Hydrostatics | 12                 | 1.1 Properties of fluid: density, specific gravity, surface tension, capillarity, viscosity and their uses.<br>1.2 Pressure and its measurements.<br>1.3 Pressure exerted on an immersed surface: Total pressure, resultant pressure, expression for total pressure exerted on horizontal & vertical surface. | 14.02.2023<br>-<br>14.03.2023 | 1.1<br>1.2<br>1.3    | Properties of fluid: density, specific gravity, surface tension, capillarity, viscosity and their uses.<br>Pressure and its measurements.<br>Pressure exerted on an immersed surface: Total pressure, resultant pressure, expression for total pressure exerted on horizontal & vertical surface. | 14.02.2023<br>17.02.2023<br>21.02.2023<br>24.02.2023<br>25.02.2023<br>28.02.2023<br>03.03.2023<br>10.03.2023<br>11.03.2023<br>14.03.2023 |         |

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|---|--------------------------|----|--|-------------------------------|--------------------------|--|--|--|--|
| 2                                       | Kinematics Of Fluid Flow | 18 | 2.1 Basic equation of fluid flow and their application.<br>2.2 Flow over Notches and Weirs: Notches, Weirs, types of notches and weirs, Discharge through different types of notches and weirs-their application.<br>2.4 Losses of head of a liquid flowing through pipes: Different types of major and minor losses.<br>2.5 Flow through the Open Channels. | 17.03.2023<br>-<br>09.05.2023 | 2.1<br>2.2<br>2.4<br>2.5 | Basic equation of fluid flow and their application.<br>Flow over Notches and Weirs: Notches, Weirs, types of notches and weirs, Discharge through different types of notches and weirs-their application.<br>Losses of head of a liquid flowing through pipes: Different types of major and minor losses.<br>Flow through the Open Channels. | 17.03.2023<br>18.03.2023<br>21.03.2023<br>24.03.2023<br>25.03.2023<br>28.03.2023<br>31.03.2023<br>04.04.2023<br>18.04.2023<br>21.04.2023<br>25.04.2023 |  |  |
| 3                                       | Pumps                    | 5  | 3.1 Type of pumps<br>3.2 Centrifugal pump: basic principles, operation, discharge, horse power & efficiency.<br>3.3 Reciprocating pumps: types, operation, discharge, horse power & efficiency   | 12.05.2023<br>-<br>23.05.2023 | 3.1<br>3.2<br>3.3        | Type of pumps<br>Centrifugal pump: basic principles, operation, discharge, horse power & efficiency.<br>Reciprocating pumps: types, operation, discharge, horse power & efficiency   | 12.05.2023<br>13.05.2023<br>16.05.2023<br>20.05.2023<br>23.05.2023   |  |  |
| <b>PART: B (IRRIGATION ENGINEERING)</b> |                          |    |  |                               |                          |  |  |  |  |
| 1                                       | Hydrology                | 4  | 1.1 Hydrology Cycle<br>1.2 Rainfall: types, intensity, hyetograph<br>1.3 Estimation of rainfall, rain gauges, Its types.<br>1.4 Concept of catchment area, types, run-off, estimation of flood discharge by Dicken's and Ryve's formulae   | 13.02.2023<br>-<br>16.02.2023 | 1.1<br>1.2<br>1.3<br>1.4 | Hydrology Cycle<br>Rainfall: types, intensity, hyetograph<br>Estimation of rainfall, rain gauges, Its types.<br>Concept of catchment area, types, run-off, estimation of flood discharge by Dicken's and Ryve's formulae   | 13.02.2023<br>16.02.2023   |  |  |

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|---|----------------------------|---|--|-------------------------------|--|--|--|
| 2 | Water Requirement Of Crops | 4 | 2.1 Definition of irrigation, necessity, benefits of irrigation, types of irrigation<br>2.2 Crop season<br>2.3 Duty, Delta and base period their relationship, overlap allowance, kharif and rabi crops<br>2.4 Gross command area, culturable command area, Intensity of Irrigation, irrigable area, time factor, crop ratio                 | 20.02.2023<br>-<br>23.02.2023 | 2.1 Definition of irrigation, necessity, benefits of irrigation, types of irrigation<br>2.2 Crop season<br>2.3 Duty, Delta and base period their relationship, overlap allowance, kharif and rabi crops<br>2.4 Gross command area, culturable command area, Intensity of Irrigation, irrigable area, time factor, crop ratio                 | 20.02.2023<br><br>23.02.2023   |  |
| 3 | Flow Irrigation            | 7 | 3.1 Canal irrigation, types of canals, loss of water in canals<br>3.2 Perennial irrigation<br>3.3 Different components of irrigation canals and their functions<br>3.4 Sketches of different canal cross-sections<br>3.5 Classification of canals according to their alignment, Various types of canal lining – Advantages and disadvantages | 02.03.2023<br>-<br>16.03.2023 | 3.1 Canal irrigation, types of canals, loss of water in canals<br>3.2 Perennial irrigation<br>3.3 Different components of irrigation canals and their functions<br>3.4 Sketches of different canal cross-sections<br>3.5 Classification of canals according to their alignment, Various types of canal lining – Advantages and disadvantages | 02.03.2023<br><br>06.03.2023<br>09.03.2023<br>13.03.2023<br>16.03.2023 |  |
| 4 | Water Logging And Drainage | 2 | 4.1 Causes and effects of water logging, detection, prevention and remedies  | 20.03.2023<br>-<br>23.03.2023 | 4.1 4.1 Causes and effects of water logging, detection, prevention and remedies  | 20.03.2023<br>23.03.2023   |  |

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|---|--|---|--|-------------------------------|--|--|--|
| 5 | Diversion Head Works And Regulatory Structures | 8 | 5.1 Necessity and objectives of diversion head works, weirs and barrages<br>5.2 General layout, functions of different parts of barrage<br>5.3 Silting and scouring<br>5.4 Functions of regulatory structures  | 27.03.2023<br>-<br>13.04.2023 | 5.1 Necessity and objectives of diversion head works, weirs and barrages<br>5.2 General layout, functions of different parts of barrage<br>5.3 Silting and scouring<br>5.4 Functions of regulatory structures  | 27.03.2023<br>03.04.2023<br>06.04.2023<br>10.04.2023<br>13.04.2023               |  |
| 6 | Cross Drainage Works                           | 7 | 6.1 Functions and necessity of Cross drainage works - aqueduct, siphon, superpassage, level crossing<br>6.2 Concept of each with help of neat sketch   | 17.04.2023<br>-<br>01.05.2023 | 6.1 Functions and necessity of Cross drainage works - aqueduct, siphon, superpassage, level crossing<br>6.2 Concept of each with help of neat sketch   | 17.04.2023<br>20.04.2023<br>24.04.2023<br>27.04.2023<br>01.05.2023               |  |
| 7 | Dams   | 8 | 7.1 Necessity of storage reservoirs, types of dams<br>7.2 Earthen dams: types, description, causes of failure and protection measures.<br>7.3 Gravity dam- types, description, Causes of failure and protection measures.<br>7.4 Spillways- Types (With Sketch) and necessity. | 04.05.2023<br>-<br>22.05.2023 | 7.1 Necessity of storage reservoirs, types of dams<br>7.2 Earthen dams: types, description, causes of failure and protection measures.<br>7.3 Gravity dam- types, description, Causes of failure and protection measures.<br>7.4 Spillways- Types (With Sketch) and necessity. | 04.05.2023<br>08.05.2023<br>11.05.2023<br>15.05.2023<br>18.05.2023<br>22.05.2023 |  |

  
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