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| LESSON PLAN OF 4TH SEMESTER(2016-19) CIVIL ENGINEERING | | |
| Discipline :-CIVIL | Semester:-4TH | Name of the Teaching Faculty  RABINDRA SAHU |
| Subject:-  Irrigation Engineering | No of Days/per Week Class Allotted :-04 | Semester From:- **02ND JAN,2019** To:- **15TH APRIL, 2019**  No of Weeks:- **14** |
| **ssWeek** | **Class Day** | **Theory/ Practical Topics** |
| 1st | 1st | 1.0 INTRODUCTION :  1.1 History of development of irrigation in India |
| 2nd | 1.2 Types of irrigation |
| 3rd | 1.3 Sources of irrigation water |
| 4th | 2.0 HYDROLOGY |
| 2nd | 1st | 2.1 Hydrology Cycle |
| 2nd | 2.2 Rainfall: types, |
| 3rd | intensity,hyetograph |
| 4th | 2.3 Estimation of rainfall, rain gauges, |
| 3rd | 1st | types- automatic and Non-automatic |
| 2nd | 2.4 Concept of catchment area, types, run-off estimation of flood discharge by Dicken’s and Ryve’s formulae |
| 3rd | 2.5 Concepts of Hydrograph, definition and explanation, unit hydrograph |
| 4th | 3.0 WATER REQUIREMENT OF CROPS |
| 4th | 1st | 3.1 Crop season |
| 2nd | 3.2 Duty, Delta and base Period |
| 3rd | their relationship |
| 4th | 3.3 Gross command area, culturable command area |
| 5th | 1st | Intensity of Irrigation, irrigable area |
| 2nd | 3.4 Field capacity, Permanent wilting poin |
| 3rd | frequency of irrigation |
|  | 4th | 4.0 FLOW IRRIGATION  4.1 Irrigation canals |
| 6th | 1st | 4.2 Perennial irrigation |
| 2nd | 4.3 Different components of irrigation canals and their functions |
| 3rd | 4.4 Sketches of different canal cross-sections |
| 4th | 4.5 Classification of canals according to their alignment Various types of canal lining – Advantages and disadvantages |
| 7th | 1st | 5.0 WATER LOGGING AND DRAINAGE |
| 2nd | 5.1 Causes and effects of water logging |
| 3rd | detection, prevention and remedies |
| 4th | 6.0 DIVERSION HEAD WORKS AND REGULATORY STRUCTURES  6.1 Necessity and objectives of diversion head works |
| 8th | 1st | 6.2 General layout, functions of different parts of barrage 6.3 Difference between weir and barrage |
| 2nd | 6.4 Functions of regulatory structures |
| 3rd | 6.5 Cross and Head regulators 6.6 Falls |
| 4th | 6.7 Energy dissipaters 6.8 Outlets – different types |
| 9th | 1st | 6.9 Escapes |
| 2nd | 7.0 CROSS DRAINAGE WORK |
| 3rd | 7.1 Functions and necessity of Cross drainage works |
| 4th | aqueduct, siphon, super-passage, level crossing, inlet and outlet |
| 10th | 1st | 7.2 Details of each with help of neat sketch |
| 2nd | 8.0 DAMS |
| 3rd | 8.1 Necessity of storage reservoirs, types of dams |
| 4th | 8.2 Earthen dams: types, description |
| 11th | 1st | causes of failure and protection |
| 2nd | 8.3 Gravity dam- types, |
| 3rd | description |
| 4th | Causes of failure and protection |
| 12th | 1st | 8.4 Spillways- types |
| 2nd | description |
| 3rd | Causes of failure and protection measures |
| 4th | 9.0 GROUND WATER HYDROLOGY |
| 13th | 1st | 9.1 Introduction, occurrence and quantity of ground water, explanation of terms- water table |
| 2nd | aquifer- confined and unconfined aquifers, aquiclude, radius of influence |
| 3rd | depression head, cone of depression etc |
| 4th | 9.2 Types of wells – shallow and deep well, |
| 14th | 1st | construction of open wells |
| 2nd | 9.3 Types of tube wells |
| 3rd | methods of construction of tube wells, boring, installation of well assembly |
| 4th | development of well, pump selection, installation and maintenance |