

## WATER RESOURCES DEVELOPMENT AND MANAGEMENT

**M.Tech. (Irrigation Water Management)**

[illegible]

### Program Elective Courses (IWM)

| Teaching Scheme |              |                                                                    |              |         | Contact Hours/Week |   |   | Exam Duration |           | Relative Weight (%) |     |               |               |     |
|-----------------|--------------|--------------------------------------------------------------------|--------------|---------|--------------------|---|---|---------------|-----------|---------------------|-----|---------------|---------------|-----|
| S. No.          | Subject Code | Course Title                                                       | Subject Area | Credits | L                  | T | P | Theory        | Practical | CWS                 | PRS | MTE           | ETE           | PRE |
| 1.              | WRN-503      | Water Resources Planning and Management                            | PEC          | 4       | 3                  | 1 | 0 | 3             | -         | 25                  | -   | 25            | 50            | -   |
| 2.              | WRN-504      | Applied Hydrology                                                  | PEC          | 4       | 3                  | 1 | 0 | 3             | -         | 25                  | -   | 25            | 50            | -   |
| 3.              | WRN-513      | Earth and Rockfill Dams                                            | PEC          | 4       | 3                  | 1 | 0 | 3             | -         | 25                  | -   | 25            | 50            | -   |
| 4.              | WRN-516      | Rural and Urban Water Supply                                       | PEC          | 4       | 3                  | 1 | 0 | 3             | -         | 25                  | -   | 25            | 50            | -   |
| 5.              | WRN-520      | Environmental Impact Assessment of Water Resource Projects         | PEC          | 4       | 3                  | 1 | 0 | 3             | -         | 25                  | -   | 25            | 50            | -   |
| 6.              | WRN-522      | Climate Change and Water Resources                                 | PEC          | 4       | 3                  | 1 | 0 | 3             | -         | 25                  | -   | 25            | 50            | -   |
| 7.              | WRN-572      | Soil and Agronomy                                                  | PCC          | 4       | 3                  | 1 | 0 | 3             | -         | 25                  | -   | 25            | 50            | -   |
| 8.              | WRN-576      | Operation Maintenance and Management of Irrigation Systems         | PEC          | 4       | 3                  | 1 | 0 | 3             | -         | 25                  | -   | 25            | 50            | -   |
| 9.              | WRN-577      | Water and Land Laws                                                | PEC          | 4       | 3                  | 1 | 0 | 3             | -         | 25                  | -   | 25            | 50            | -   |
| 10.             | WRN-578      | Rural Sociology and Irrigation Economics                           | PEC          | 4       | 3                  | 1 | 0 | 3             | -         | 25                  | -   | 25            | 50            | -   |
| 11.             | WRN-579      | Evaluation of Irrigation Project                                   | PEC          | 4       | 3                  | 1 | 0 | 3             | -         | 25                  | -   | 25            | 50            | -   |
| 12.             | WRN-580      | Renewable Energy System Technology                                 | PEC          | 4       | 3                  | 1 | 0 | 3             | -         | 25                  | -   | 25            | 50            | -   |
| 13.             | WRN-581      | Water Quality Monitoring and Modeling                              | PEC          | 4       | 3                  | 1 | 0 | 3             | -         | 25                  | -   | 25            | 50            | -   |
| 14.             | WRN-582      | Theory of Seepage                                                  | PEC          | 4       | 3                  | 1 | 0 | 3             | -         | 25                  | -   | 25            | 50            | -   |
| 15.             | WRN-583      | Remote Sensing and GIS Applications in Agriculture                 | PEC          | 4       | 3                  | 1 | 0 | 3             | -         | 25                  | -   | 25            | 50            | -   |
| 16.             | WRN-584      | Cropping System Modeling                                           | PEC          | 4       | 3                  | 1 | 0 | 3             | -         | 25                  | -   | 25            | 50            | -   |
| 17.             | WRN-585      | Environmental Impact of Irrigated Agriculture                      | PEC          | 4       | 3                  | 1 | 0 | 3             | -         | 25                  | -   | 25            | 50            | -   |
| 18.             | WRN-586      | Groundwater Development and Management                             | PEC          | 4       | 3                  | 1 | 0 | 3             | -         | 25                  | -   | 25            | 50            | -   |
| 19.             | WRN-587      | Watershed Development and Management                               | PEC          | 4       | 3                  | 1 | 0 | 3             | -         | 25                  | -   | 25            | 50            | -   |
| 20.             | WRN-597      | Machine Learning Models in Water Resources Planning and Management | PEC          | 4       | 3                  | 1 | 0 | 3             | -         | 20<br>-<br>35       | -   | 20<br>-<br>30 | 40<br>-<br>50 | -   |
| 21.             | WRN-598      | Smart Irrigation Systems                                           | PEC          | 4       | 3                  | 1 | 0 | 3             | -         | 20<br>-<br>35       | -   | 20<br>-<br>30 | 40<br>-<br>50 | -   |