University of Rajasthan
Jaipur
SYLLABUS

P.G. Diploma in Water Conservation & Management

(Annual Scheme)

Examination 2019
PG Diploma in Water Conservation & Management

Exam

Duration of PG Diploma Course: one year (180 working days)
Mode: SFS
Procedure for admission: through merit (as per university norms)
Minimum Eligibility: Graduate from Science/Engineering discipline
Maximum no. of seats: 30
Fee: 20,000/- per student for one year + examination fee of the university
Annual Course: Total Marks- 400

Scheme of Examination

No. of Papers- 4, each of 100 marks & three hours duration

Paper I - Management and Monitoring of water resources
Paper II- Water, Pollution and quality assessment
Paper-III- Policies, Administrative machinery community involvement and water analysis
Paper IV- Survey, Seminar and Dissertation

A candidate for a pass shall be required to obtain at least 36% marks in the aggregate of all the papers prescribed for the examination and at least 25% marks in individual paper.

Division shall be awarded as noted below:
First division- 60%    Second Division-50%

All the rest will be declared to have passed the examination
Syllabus

Paper I - Management and Monitoring of Water Resources

Section A

Section B
Water harvesting: need, principles of water harvesting, general water harvesting methods - rain water harvesting - roof top rain water harvesting mostly used in urban areas, subsurface barrier/dykes, farm ponding, etc mostly used in rural areas. Groundwater recharge. Revival of traditional techniques for water harvesting. Calculation of available rain water for harvesting. Preparation of suitable technical drawing and design of rain water harvesting structure

Section C
Water conservation: importance, elementary knowledge regarding conservation/saving of water in daily use, in agriculture, in industries. Subsurface investigation of groundwater: general, geophysical methods and its importance. Present law regarding water management
Water footprints.

Paper II - Water Pollution and Quality Assessment

Section A

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(Academic)
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Section B
Water supply in urban and rural areas: techniques for water supply in rural areas. National rural drinking water program - rural water quality monitoring and surveillance- operation and maintenance of rural water supplies. Quality issues in water supply. Different methods to conserve water in industries: water recycling.

Section C
Different methods to conserve water in agriculture: sprinkler, drip irrigation, root irrigation, use of polymers, organic amendments usage, dry land farming, agro-forestry, cover crops growing, no till farming, orchard development, rotational crop method (alternate sowing method, alternate irrigation), water saving economic crops.

Paper III- Policies, Administrative machinery community involvement and water analysis

Section A
Act/policies related to water management/conservation at Central and State levels. Administrative machinery for implementation: from State to Panchayat levels.

Section B
Community involvement in water management: roles of Panchayati Raj institutions, NGO's, educational institutions, media, political parties and farmers associations.

Section C
Elementary idea of water analysis and instruments used (chemist). Chemical analysis with the help of portable instrument
Paper IV- Survey, Seminar and Dissertation

Section A

Visit of existing harvesting structures and their workings. To propose the suitable design of roof top rain water harvesting structure of a given building. To propose the suitable design for rain water harvesting structure of a given area: rural or urban.

Section B


Section C

Water analysis with the help of portable instrument.
Resource persons
1. From various reputed academic departments and professional organisations and/or approved by Director of the centre.

Books recommended:
1. Ahuja, Satinder 2008, Arsenic Contamination of Groundwater: Mechanism, Analysis, and Remediation WileyIntersci
5. Edmunds 2008, Natural Groundwater Quality WileyIntersci
6. Erach Bharucha Textbook for Environmental Studies For Undergraduate Courses of all Branches of Higher Education by for University Grants Commission
7. Ganoulis 2009, Risk Analysis of Water Pollution WileyIntersci
10. Hamilton 2004, Pesticide Residues in Food and Drinking Water - Human Exposure an WileyIntersci
11. Kazemi 2006, Groundwater Age WileyIntersci
12. Misstear 2006, Water Wells and Boreholes WileyIntersci
13. National Research Council 2004 Indicators for Waterborne Pathogens NatAcadPr
15. Todd, D.K. 1980, Ground water Hydrology, John Wiley and Sons
17. Wiesmann 2006, Biological Wastewater Treatment - Fundamentals, Microbiology, Ind WileyIntersci