BACHELORS WITH WATER MANAGEMENT AS MAJOR (CT – I)
5th SEMESTER

WMG522J1 WATER MANAGEMENT _ WATER RESOURCE MANAGEMENT

CREDITS: THEORY: 3, PRACTICAL: 1

COURSE OUTCOME:

The student is expected to learn different tools, techniques and policies for management and conservation of water resources which are crucial for the sustenance of life on earth.

UNIT-1: INTEGRATED WATER RESOURCE MANAGEMENT

History of water management, Integrated water resource management: concepts and theoretical perspectives, Principles and tools for practising IWRM, Issues and challenges in IWRM, Corporate social responsibility in water resource management

UNIT-2: WATER HARVESTING AND WATER SHED MANAGEMENT

Concept and framework of watershed approach, Soil and water conservation- conservation technology, Water harvesting-importance and techniques, Integratedwatershed, development, A case study of water harvesting

UNIT-3: FRESHWATER ECOSYSTEM MANAGEMENT

Artificial recharges of ground water, River basin management, Management of lakesManagement of wetlands, Case study: Dal Lake, Ganga action plan

PRACTICAL:

1. Determination of importance value index (IVI) of different plant species in a lake
2. Application of diversity indices in an aquatic habitat
3. Measurement of lake area and lake volume
4. Case studies based of techniques of rainwater harvesting

SUGGESTED READINGS:

1. D. Borchardt, J.J. Bogardi and R.B. Iibish (Editors). 2016. Integrated Water ResourcesManagement: Concept, Research and Implementation. Springer.
2. D. Borchardt abd Ralf iiblish (editors). 2013. Integrated Water ResourceManagement in a changing world. IWA publishing.
3. A. Castellitti and R.S.Sessa (Editors). 2007 Topics on System Analysis and Integrated Water Resource Management. Elsevier
4. B. Gopal, E.R.N. Gunawardena, and H. Kotagama (Editors). Ecosystems and Integrated Water Resources Management in South Asia. Routledge.
5. B. Vasantha Kumar. 2010. Aquatic Ecosystems and its Management. Daya PublishingHouse.
6. S.Jorgensen, J.G. Tundisi, and T.M. Tundisi. 2020. Handbook of Inland AquaticEcosystem Management (Applied Ecology and Environmental Management). CRC Press.
7. Q. Zhu, J.G.Y. Li and C. Ma (Editors). 2015. Rainwater harvesting for agriculture andwater supply. Springer.
8. R.Avis and M.Avis. 2019. Rainwater harvesting: A guide to human scale system design.New Society Publishers.
9. I.W. Heatcole. 2009. Integrated Watershed Management. Wiley Publishing.
10. R.Rajora. 1998. Integrated Watershed Management. A Field Manual. Rawat Publications.

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