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| Descrizione fisica | 1 online resource (xiv, 120 pages) : illustrations |
| Collana | Environmental Engineering Collection |
| Disciplina | 628.351 |
| Soggetti | Sewage lagoons<br>Sewage - Purification<br>Electronic books. |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di bibliografia | Includes bibliographical references (pages 101-111) and index. |
| Nota di contenuto | 1. Introduction -- 1.1 Wastewater management and sustainability -- 1.1.1 Natural treatment systems and the new paradigm for wastewater management -- 1.1.2 Natural treatment systems and sustainable development -- 1.1.3 Basics about wastewater -- 1.1.4 Global use of natural wastewater treatment systems -- 1.2 Purpose and scope of this book --<br>2. Biology of ponds, lagoons, and wetlands -- 2.1 Introduction -- 2.2 Classification of organisms by energy and carbon source -- 2.3 Biodiversity in ponds, lagoons, and wetlands -- 2.3.1 Prokaryotes -- 2.3.2 Viruses -- 2.3.3 Plants, algae, and cyanobacteria -- 2.3.4 Protozoa -- 2.3.5 Macroinvertebrates -- 2.3.6 Fungi -- 2.3.7 Larger organisms -- 2.4 Biological transformations of organic matter -- 2.5 The carbon, nitrogen, phosphorus, and sulfur cycles -- 2.5.1 Carbon cycle -- 2.5.2 Nitrogen cycle -- 2.5.3 Phosphorus cycle -- 2.5.4 Sulfur cycle -- 2.6 Pathogenic and nuisance organisms -- 2.6.1 Microorganisms associated with disease -- 2.6.2 Nuisance organisms --<br>3. Site selection and physical design considerations -- 3.1 Site selection -- 3.2 Lining materials -- 3.3 Earthwork, slopes, berms, and embankments -- 3.4 Hydraulic design of wastewater systems -- 3.4.1 Inlets and outlets -- 3.4.2 Flow control structures -- 3.5 Overview -- 3.6 Design approaches -- 3.6.1 Loading rate approach -- 3.6.2 Reactor |

theory approach --
4. Wastewater treatment ponds and lagoons -- 4.1 Introduction -- 4.2 Pretreatment -- 4.2.1 Screening -- 4.2.2 Grit removal -- 4.3 Anaerobic ponds -- 4.4 Facultative ponds -- 4.5 Mechanically aerated ponds -- 4.6 Maturation and polishing ponds -- 4.6.1 Removal of pathogens and fecal indicator organisms -- 4.6.2 Ammonia and total nitrogen removal -- 4.6.3 Phosphorus removal -- 4.7 Floating macrophyte ponds (wetlands) --
5. Constructed wetlands -- 5.1 Introduction -- 5.2 Horizontal subsurface flow wetlands -- 5.2.1 Loading rate approach -- 5.2.2 Reactor theory approach -- 5.3 Vertical flow wetlands -- 5.3.1 Loading rate approach -- 5.3.2 Reactor theory approach -- 5.4 Free water surface flow wetlands -- 5.4.1 Hydraulic design -- 5.4.2 Loading rate approach -- 5.4.3 Reactor theory approach -- 5.5 Selection of plant species -- 5.6 Substrate -- 5.6.1 Horizontal subsurface flow wetlands -- 5.6.2 Vertical flow wetlands -- 5.6.3 Free water surface flow wetlands --
6. Industrial wastewater -- 6.1 Introduction -- 6.2 Animal waste -- 6.3 Food processing waste -- 6.4 Coal combustion residuals -- 6.5 Pulp and paper mill waste --
7. Operation and maintenance -- 7.1 Start-up -- 7.2 Sludge management -- 7.3 Routine monitoring -- 7.4 Visual and sensory cues -- References -- Author biography -- Index.

Sommario/riassunto

Engineered ponds, lagoons, and wetlands have been used for centuries to treat and manage wastewater, and they are still widely used today. They require very few external energy and material inputs and provide ecosystem services for communities. This book presents a compilation of guidelines to design ponds, lagoons, and wetlands for the treatment and management of domestic or municipal wastewater, agricultural wastewater, and industrial waste. Sufficient detail and clarity is provided for practitioners to use this book as a reference, and for senior year or graduate college students to develop an understanding of the design concepts for these engineered natural treatment systems.

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| Autore | Springer D |
| Titolo | A feasibility study [[electronic resource] ] : ductless hydronic distribution systems with fan coil delivery / / prepared for Building America, Building Technologies Program, Office of Energy Efficiency and Renewable Energy, U.S. Department of Energy ; prepared by D. Springer, B. Dakin, and C. Backman |
| Pubbl/distr/stampa | [Washington, D.C.] : , : U.S. Dept. of Energy, Energy Efficiency & Renewable Energy, , [2012] |
| Descrizione fisica | 1 online resource (33 unnumbered pages) : illustrations (some color) |
| Altri autori (Persone) | DakinB<br>BackmanC |
| Soggetti | Hydronics - Energy consumption - United States<br>Cooling load - Energy consumption - United States<br>Heating load - Energy consumption - United States |
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