

Everglades Wetland Research Park

Solving ecological problems in collaboration with nature

Florida Gulf Coast University, Naples, Florida

About the Instructors

James S. Bays, M.S., S.E., P.W.S.

Jim Bays is a Technology Fellow in Natural Treatment Systems employed by CH2MHILL with over 30 years of experience in wetland planning, assessment, and design. He is a certified Senior Ecologist, Professional Wetland Scientist, and Ecological Designer. Mr. Bays received his M.S. in Environmental Engineering Sciences from the University of Florida and a B.S. in Environmental Biology from Ohio University. He specializes in the planning, design and operation of wetlands for water quality improvement for municipal, industrial and agricultural wastewaters, stormwater, and mine-impacted water and has provided senior consulting project designs for wetlands in the United States, Canada, Italy, Malaysia, Singapore and Australia. Jim's particular interests are the design of treatment wetlands for public recreation, the use of integrated biochemical reactor wetlands for biological selenium reduction, and the beneficial reuse of wastewater and membrane concentrate for wildlife habitat creation.

Sven E. Jørgensen, D.Eng., Sc.D.

Prof. Jørgensen received his Master of Chemical Engineering, DTU, Denmark, D.Eng. in Environmental Engineering from Karlsruhe University, Germany, and Sc.D. (Ecological Modelling) from Copenhagen University in 1990. He is currently Professor Emeritus, University of Copenhagen. He has authored/co-authored over 350 papers and written or edited 76 scientific books on ecological modelling, systems ecology, ecological engineering, environmental science, and environmental management of aquatic systems. He has advised 30 Ph.D. students in environmental chemistry and sciences at the Royal Danish School of Pharmacy, University of Copenhagen. Professor Jørgensen was founder and editor in chief (1975-2009) and is now honorary editor of Ecological Modelling. He has been President of ISEM (International Society of Ecological Modelling) for 1978-1994 and 2007-present. His many awards include the 2004 Stockholm Water Prize with co-laureate William J. Mitsch for outstanding contributions on the world's lakes and wetlands.

Jiyoung Lee, Ph.D.

Dr. Jiyoung Lee is Associate Professor at Ohio State University in the College of Public Health's Division of Environmental Health Sciences; she also has a joint appointment with the Department of Food Science and Technology. She has her B.S. and M.S. in microbiology from Seoul National University and her Ph.D. from University of Michigan's School of Public Health. She had 10 year's experience in managing both academic and private laboratories in Ann Arbor, Michigan. Her primary research area is environmental microbiology for understanding the pathways of pathogen transmission from the contamination sources to human exposure in the environment, including water exposure, using molecular and genomic tools to investigate the microbial community structure, statistical tools, and rapid methods for the detection of target microorganisms. Her recent work in Ohio has focused on the impact of climate change on the transmission, fate and virulence of enteric infectious agents and cyanobacteria (beach water and drinking water) and the ecological services provided by wetlands to enhance beach water quality.

Roy R. "Robin" Lewis, III

Mr. Lewis is founder and President of Lewis Environmental Services, Inc., Tampa, Florida. He received his B.S. in Biology from the University of Florida and his M.S. from the University of South Florida. He taught at Hillsborough Community College. His expertise includes the ecology, restoration, and creation of fresh and saltwater wetlands. He has designed more than 200 wetland restoration or creation projects in Florida, California, Mississippi, South Carolina, Puerto Rico, the U.S. Virgin Islands, Barbados, Thailand, Hong Kong, and Nigeria. He currently has projects in Brazil and Jamaica. Mr. Lewis is a Certified Senior Ecologist with the Ecological Society of America, a certified Professional Wetland Scientist with the Society of Wetland Scientists, and was a member of the NRC's Committee on the Role of Technology in Marine Habitat Protection. He has published more than 100 papers on wetland and aquatic system restoration and creation.

Ülo Mander, Ph.D.

Dr. Mander is Professor of Landscape Ecology and Physical Geography and head of the Department of Geography, Institute of Ecology and Earth Sciences, University of Tartu, Estonia. His research interests are nutrient cycling in agricultural landscapes, controlling nutrient fluxes by riparian buffer zones and constructed wetlands, pattern and processes in wetland ecosystems, greenhouse gas emissions from natural and created wetlands, and landscape changes and its ecological consequences. He has more than 250 scientific publications, has edited 12 special issues of journals and 12 books by international publishing companies. He is member of the editorial board of several international peer reviewed journals: Ecological Engineering, Landscape and Urban Planning, Landscape Ecology, Journal for Nature Conservation, Ecological Indicators, and Wetlands. He is member of the board of the International Ecological Engineering Society (IEES) and member of several international organizations and societies (IALE, IWA, INTECOL, SWS).

William J. Mitsch, Ph.D.

Prof. Mitsch is Eminent Scholar and Director, Everglades Wetland Research Park and Juliet C. Sproul Chair for Southwest Florida Habitat Restoration and Management at Florida Gulf Coast University. He is also Professor Emeritus and Founding Director of the Olen tangy River Wetland Research Park at The Ohio State University. He received a B.S. in engineering at the University of Notre Dame and a Ph.D. in systems ecology at the University of Florida, and also taught at the Illinois Institute of Technology and the University of Louisville. Professor Mitsch's research and teaching have focused on wetland ecology and biogeochemistry, wetland creation and restoration, ecological engineering and ecosystem restoration, and ecosystem modeling. He has co-authored or co-edited 18 books, including four editions of *Wetlands* and two versions of *Ecological Engineering* and has authored or co-authored over 500 papers, reports, and other publications. He has advised over 80 graduate students and 10 post-docs. He is founder and editor-in-chief of the journal *Ecological Engineering* and founder and past president of the American Ecological Engineering Society (AEES). His many awards include the 2004 Stockholm Water Prize with co-laureate Sven E. Jørgensen for outstanding contributions to the world's lakes and wetlands.

Ralph Tiner

Ralph W. Tiner is a nationally recognized expert in wetland delineation, which he has taught since the early 1980s throughout the USA. As a member of the Federal Interagency Committee on Wetland Delineation, he was compiler and principal author of the federal interagency wetland delineation manual published in 1989. He is adjunct professor at the University of Massachusetts and the author of several books, including two textbooks, two field guides to wetland plants and three field guides to wetland delineation. Mr. Tiner has written over 200 publications on topics ranging from the ecotone concept of wetlands to the current status of wetlands in several states and the entire country.

Jos Verhoven, Ph.D.

Dr. Verhoeven is Professor of Landscape Ecology in the Department of Biology of Utrecht University, The Netherlands. He graduated at the Aquatic Ecology group at Radboud University Nijmegen (1980). He has also held visiting faculty appointments at the Smithsonian Environmental Research Center at Edgewater, Maryland (USA) and Murdoch University at Perth, Western Australia. He is a former Editor of *Wetlands* and *Wetlands Ecology and Management* and on the editorial board of *Ecological Engineering*. He is on the executive board of INTECOL and was chief organizer of the 7th INTECOL International Wetlands Conference in Utrecht in 2004. He is active in large scientific programs (e.g., Knowledge for Climate) and European networks (European Science Foundation, and EU-funded projects such as EVALUWET, NICOLAS, EUROLIMPACS). His research focuses on the interactions among the biogeochemical cycles of carbon, nitrogen and phosphorus in wetlands and the relation between biodiversity and ecosystem functioning.

Li Zhang, Ph.D.

Dr. Zhang is Assistant Director, Everglades Wetland Research Park, Florida Gulf Coast University. Prior to that position she was Assistant Director, Olen tangy River Wetland Research Park, The Ohio State University. She received her Ph.D. from Australian National University, Canberra, Australia in Environmental Science under ecological modeler Tony Jakeman. Her specialties are wetland hydrology and data base management. Li is from Sichuan Province, China and received her B.S. degree in Sciences from Sichuan University. She has been an NSF Review Panelist for the NSF East Asia and Pacific Summer Institutes (EAPS) program, serves on the Editorial Boards of Ecological Indicators and Sichuan Forestry Sciences and Technology and is Adjunct Professor in Sichuan Institute of Forestry, China (2006 - present).

Short Course Descriptions

We are proud to announce six environmental short courses for professionals and academics from all over the world for academic year 2013-2014 in Naples, Florida, USA. These courses, taught by an international faculty from North America, Europe and Asia, will be at the beautiful Kapnick Center, located at the Naples Botanical Garden, in the tourist destination city of Naples, in SW Florida. Course descriptions and fees are indicated here.

CREATION AND RESTORATION OF WETLANDS

November 7-9, 2013 Naples, FL

Instructors: William J. Mitsch and Roy R. "Robin" Lewis, III

Description: This course introduces the basics of wetland creation and restoration for mitigation of lost wetlands or wildlife habitat creation, i.e., "mitigation wetlands." Course will emphasize proper landscape approaches and working with site hydrology. Case studies from Florida and several other locations in the USA will be used to illustrate principles. Wetlands in southwest Florida will be visited in field trips to illustrate different approaches to constructing successful and unsuccessful wetlands. Course topics include: the mitigation process for Section 404, getting the hydrology right, wetland basin construction—what to watch for, selecting wetland plants and planting techniques, self-design vs. designer wetlands, monitoring created and restored wetlands, soil development, and hydric soil vs. non-hydric soil.

Text: Ecological Engineering and Ecosystem Restoration (Mitsch, W.J. and S.E. Jørgensen, 2004, John Wiley & Sons) is included in course fee.

Course Fee: US\$1200 (includes all course materials and textbook)

Register by September 13, 2013 for a 10% discount.

TREATMENT WETLANDS

December 12-14, 2013 Naples, FL

Instructors:William J. Mitsch, Ülo Mander, and James S. Bays

Description: This course introduces the basics of using wetlands for improving water quality, particularly for treating domestic wastewater, non-point source pollution, and stormwater runoff. Design parameters including hydrology, water quality, soil physics and chemistry, and vegetation will be discussed. In addition, wetland management after construction including wildlife issues, carbon sequestration and greenhouse gases, mosquitos, pathogens, hydrologic management, and economics will be presented. Field trips will be to successful domestic wastewater and stormwater runoff wetlands in south Florida, including the stormwater treatment areas created to improve water quality of the Florida Everglades.

Text: Wetlands, 4th edition (Mitsch, W.J. and J.G. Gosselink, 2007, John Wiley & Sons) is included in course fee.

Course Fee: US\$1200 (includes all course materials and textbook)

Register by October 11, 2013 for a 10% discount.

ECOLOGICAL MODELLING

January 23-25, 2014 Naples, Florida

Instructors. Sven E. Jørgensen, William J. Mitsch, and Li Zhang

Description: The course will present how to develop models for research and environmental management. The lectures will cover how to go modeling, an overview of all the applied types of models, examples of biogeochemical models for lakes, rivers and wetlands, ecotoxicological models for management of heavy metal pollution and population dynamic models for management of fishery. Introduction to the use of the modeling software STELLA is an integrated part of the course and group projects based on a development of simple dynamic models with STELLA will be used to demonstrate how to develop ecological models for research and environmental management. The instructors will assist student groups to develop their own preliminary models for presentation by the end of the 3-day period.

Text: Fundamentals of Ecological Modelling, 4th edition (Jørgensen, S.E. and B. Fath, 2011, Elsevier) is included in the course fee.

Course fee: US\$800 (includes all course materials and textbook)

Register by November 23, 2013 and receive a 10% discount.

ECOLOGICAL ENGINEERING AND ECOSYSTEM RESTORATION

January 30 - February 1, 2014 Naples, FL

Instructors: William J. Mitsch, Sven E. Jørgensen, and Jiyoung Lee

Description: Ecological engineering is the design of sustainable ecosystems that integrate human society with its natural environment for the benefit of both. Its goals include the restoration of ecosystems that have been substantially disturbed by human activities and the development of new sustainable ecosystems that have both human and ecological value. Ecological engineering design principles and applications of ecological engineering, particularly for lake and reservoir restoration, stream and river restoration, wetland creation and restoration, coastal ecosystem and beach enhancement, treatment wetlands, and bioremediation/phytoremediation of contaminated soils, and green roof design will be covered. Case studies from around the world will be featured.



Winter 2013-14

Text: Ecological Engineering and Ecosystem Restoration (Mitsch, W.J. and S.E. Jørgensen, 2004, John Wiley & Sons) is included in course fee.

Course fee: US\$800 (includes all course materials and textbook)

Register before December 6, 2013 and receive a 10% discount.

WETLAND ECOLOGY AND MANAGEMENT

February 17-20, 2014 Naples FL

Instructors: William J. Mitsch and Jos T.A. Verhoeven

Description: The basic ecology and human history and management of wetlands of the world are covered in this course. Course includes wetland definitions and classifications, and their global extent, hydrology, biogeochemistry, biological adaptations, and succession. Management includes human impacts on wetlands, climate change and wetlands, wetland ecosystem services, wetland restoration, and wetland laws and protection. Course will include tours of mangrove and cypress swamps, and the Florida Everglades river of grass.

Text: Wetlands, 4th edition (Mitsch, W.J. and J.G. Gosselink, 2007, John Wiley & Sons) is included in course fee.

Course Fee: \$1100.00 (includes all course materials and textbook)

Register before December 20, 2013 and received 10% discount.

WETLAND DELINEATION

March 17-21, 2014 Naples Florida, USA

Instructors: Ralph Tiner and William J. Mitsch

Description: Introduction to techniques of estimating the boundaries of wetlands. Course is of sufficient depth to count for almost any delineation certification program developed by the U.S. Army Corps of Engineers and includes attention to regional delineation techniques as recently developed by the Corps. Emphasis on criteria for soils, vegetation, and hydrology and field testing. Certificates are issued to those who complete the course successfully including take-home examination. Course follows most recent guidelines developed by the U.S. Army Corps of Engineers. Field trips are included on most days to local wetland sites to test delineation technique development.

Text: Wetland Indicators: A Guide to Wetland Delineation, Classification, and Mapping (Tiner, R., 1999, Lewis Publishers) and Field Guide to Coastal Wetland Plants of the Southeastern US (Tiner, R., 1993, University of Massachusetts Press)

Course Fee: \$1400.00 (includes course material, textbook, and plant identification book)

Register before January 17, 2014 and received 10% discount.

Course Location

All Naples Everglades Institute courses will be taught at the Kapnick Center located at Naples Botanical Garden, 4940 Bayshore Drive, Naples, Florida, USA. Naples Florida is a subtropical resort town in southwestern Florida with a base regional population of 200,000 off-season and double that during peak season (January through March). Average low and high winter temperatures range between 54 and 75 °F in January to 62 to 82 °F in November during our course period. Annual precipitation is 1300 mm (52 inches) with most occurring during the summer wet season of May through October.

Naples is located on U.S. Highway 41 and US Interstate 75 between Miami (2 hours to the east) and Fort Myers (30 minutes to the north). The Naples Area is home to several major land reserves, including Corkscrew Swamp Sanctuary, Everglades National Park, Big Cypress National Preserve, Florida Panther National Wildlife Refuge, Ten Thousand Islands National Wildlife Refuge, and Picalyune Strand State Forest. The Naples area is also home to the Naples Zoo, which dates back to 1919, and the much newer dazzling Naples Botanical Garden. Downtown Naples is home to The Naples Players, the 5th Avenue South and 3rd Street South shopping districts, Gallery Row, and Tin City, an open-air shopping center specializes in antiques and handmade local novelties. The beaches of Collier and Lee Counties on the coast of the Gulf of Mexico are more than 40 miles long and are noted for its cleanliness and pristine white sand. In 2005, Naples was voted the best beach in America by the Travel Channel.

FOR MORE INFORMATION ON THE SHORT COURSES, CONTACT:
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http://fgcu.edu/swamp

Information on these short courses, registration forms, and hotel arrangements will be updated throughout the year at the above web site. A block of hotel rooms in Naples at reduced rates will be blocked off for each course and available until the early registration date.