

## Environmental Remediation and Restoration Experimental Park Module Request Form

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The Environmental Remediation and Restoration Experimental Park is available for the study of contaminant flow in the subsurface. The facility consists of six concrete test cells and twelve cylindrical stainless steel lysimeters.

The concrete test cells are designed for the purpose of wetland and subsurface lateral flow research. Each cell is lined with polycarbonate landfill liner and measures 20x4x4 ft. One dosing station and one overflow outlet is contained at each end. At the user's expense, the cells may be divided by a wolmanized lumber wall, re-lined, and have additional plumbing added to make two 10x4x4 ft cells.

The lysimeter complex contains two sets of lysimeters with different dimensions designed for the study of vertical transport through soil. Six of the cylindrical stainless steel lysimeters measure 5 ft deep with a 5 ft diameter and six measure 2 ft deep with a 4 ft diameter. All lysimeters contain an additional 1 ft conical area at the bottom of the lysimeter for sample collection. Two sprinkler heads in each lysimeter allow for control of watering, and the lysimeter complex is covered by a polycarbonate greenhouse canopy that will secure against most uncontrolled precipitation.

Due to anticipated high demand for several long-term studies, space within the research park will be reserved for active, funded (by grant or start-up funds) projects only. If neither of these scenarios applies to your research, please contact Dr. Daryl Dwyer directly for eligibility consideration. A form that can be used to reserve space is attached.

**All users are responsible for the purchasing of soil and/or plants, installation of soil and/or plants, removal and disposal of soil and/or plants, and clean-up of each module used. Please keep in mind that if you are dealing with controlled and regulated substances that your clean-up responsibilities also include disposing of hazardous waste in the appropriate matter.** Please include time needed to set-up and clean-up with your request period. A maintenance fee of \$250.00 for each test cell and \$100.00 for each lysimeter will be charged to each user per experiment per month to cover items such as mowing, plumbing winterization, pump cleaning, and routine upkeep needed to offset the wear and tear of normal usage. These "Arboretum fees" should be included as a component of grant budgets.

**Please only request space for the time period in which you plan on your project being active with set-up and clean-up time included.** If the modules you have requested do not appear to be used within 60 days of the beginning of your requested time and there is a waiting list, your space and time will be given to the next available project.

Completed forms should be returned to Pam Struffolino, MS #604 or [pamela.struffolino@utoledo.edu](mailto:pamela.struffolino@utoledo.edu). Space will be assigned on a first-come basis.

This form is largely self-explanatory. Please supply all information requested to ensure your request is processed in a timely and efficient matter.

Date of Request

**Researcher Name** \_\_\_\_\_

Office/Lab Phone \_\_\_\_\_

**Emergency Phone**

Experiment Name and Brief Description	Duration (min)	Frequency (Hz)	Amplitude (V)	Phase (deg)	Notes
Experiment 1: Basic Frequency Response	10	100	1.0	0	Initial setup and calibration.
Experiment 2: Phase Shift Analysis	15	200	1.5	90	Observing phase shift in RC circuit.
Experiment 3: Resonance Frequency Determination	20	300	2.0	0	Identifying resonance peak in RLC circuit.
Experiment 4: Impedance Measurement	12	150	1.2	45	Measuring complex impedance.
Experiment 5: Power Factor Correction	18	250	1.8	30	Improving power factor in AC system.
Experiment 6: Transient Response Analysis	25	400	2.5	0	Studying transient behavior in RL circuit.
Experiment 7: Steady-State Analysis	10	100	1.0	0	Verifying steady-state conditions.
Experiment 8: Harmonic Distortion Measurement	15	200	1.5	0	Measuring THD in power electronics.
Experiment 9: Filter Design and Characterization	20	300	2.0	0	Designing and testing active filters.
Experiment 10: System Identification	30	500	3.0	0	Identifying system parameters from data.

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**Duration of Experiment** \_\_\_\_\_

(including soil installation, \_\_\_\_\_)

removal, and clean-up) \_\_\_\_\_

**Period of Time Requested**                      **From** \_\_\_\_\_ **To** \_\_\_\_\_

Module Type Requested	4' diameter lysimeter	20' length test cell
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### 5' diameter lysimeter

Number of Modules Requested \_\_\_\_\_

### Chemicals/Biological Entities Involved

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## Concentrations of Chemicals

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Is experiment part of a funded grant?	Yes	No
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**Grant Name and Agency** \_\_\_\_\_

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**Grant Start/End Date** From \_\_\_\_\_ To \_\_\_\_\_